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ABSTRACT

This report examines the College Discovery and Development Program, which seeks to identify underachieving disadvantaged high school students with college potential, to increase their academic motivation, to improve their scholastic achievement, to develop their acceptance of college study as a realistic expectation for themselves, and to facilitate their college success. The report, which includes specialized topical essays and summaries of adjunct studies, details comparisons of the first and second year participants at intake, the achievement for the first year group in the eleventh grade, the achievement for the second year group in the tenth grade, the effects of the summer program, curriculum, college consultants, and guidance services. See ED 011 683 and UD 009 149 for first year and third year reports, respectively, of the Longitudinal Study. (EM)

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DIVISION OF TEACHER EDUCATION
Of The
CITY UNIVERSITY OF NEW YORK

DISCOVERING AND DEVELOPING THE COLLEGE POTENTIAL

OF

DISADVANTAGED HIGH SCHOOL YOUTH

A Report of the Second Year of a Longitudinal Study

on

THE COLLEGE DISCOVERY AND DEVELOPMENT PROGRAM

by

Lawrence Brody
Beatrice Harris
Genaro Lachica

March, 1968

Report No. 68-2

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A REPORT OF THE OFFICE OF RESEARCH AND EVALUATION

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FOREWORD

This volume continues to report on a study of the College Discovery and Development Program, Prong II. The first year of this program was reported in January 1967 by Daniel Tanner and Genaro Lachica, Discovering and Developing the College Potential of Disadvantaged High School Youth.

The report which follows describes the second year of the program and should be considered only in conjunction with the first year's report. The reader is strongly cautioned against drawing any but the most tentative conclusions at this time. The first phase of the program, the high school experience of its students, will not be completed for the first class enrolled until June 1968. Since the second and third classes are one and two years respectively behind the first class, data collection for the high school phase of the College Discovery and Development Program cannot be completed until June 1970. Furthermore, the second phase of the program, its students' college experience, will not begin until September 1968. Trends which may seem to be emerging must therefore be viewed with caution: while time and further experience may demonstrate the reality of some of these trends, we have noted several which may be temporary artifacts.

ACKNOWLEDGMENTS

The research staff is grateful to Chancellor Albert H. Bowker and to Dr. Robert Birnbaum and Mr. Candido De Leon of the Chancellor's staff for their continued support of the College Discovery and Development Program. Dr. Harry N. Rivlin, who as Dean of Teacher Education was influential in the planning and first year of the project, has continued to provide helpful advice. Dr. Harold H. Abelson, who was Acting Dean of Teacher Education during the year covered by the present report, was generous in his support and gracious in his guidance. Dr. Benjamin Rosner, University Dean of Teacher Education, has quickly become familiar with the details of the project and has facilitated its operation in many ways.

Dr. Bernard Donovan, Superintendent of Schools, and Dr. Nathan Brown, Executive Deputy Superintendent of Schools, have continued to support, encourage, and facilitate both the program's implementation and our research. Advice, assistance, and hard work continued to be provided by many members of the staff of the Board of Education, including among others: Dr. Seelig Lester, Deputy Superintendent in Charge of Instruction; Mr. Maurice Hopkins, Assistant Superintendent, Office of High Schools; Mr. Jacob Landers, Assistant Superintendent in Charge of State and Federally assisted programs; Assistant Superintendent Wayne D. Wrightstone and his staff; Mrs. Daisy Shaw and Mrs. Cecilia Sarasohn, Director and Assistant Director, respectively, of the Bureau of Educational and Vocational Guidance; Miss Florence Myers, Coordinator of the College Discovery and Development Program for the Board of Education; and Mr. Harold Zuckerman, Coordinator of College Guidance and Scholarships for the Board of Education.

Professors Lawrence Alexander, Aaron Carton, Maurice Lohman and Thurlow Wilson of the Division of Teacher Education, Office of Research and Evaluation, have provided, each in his own areas of competence, expert advice and technical assistance. Professor Carl Steinhoff, Dr. Pearl Brod, and Mrs. Inez Sala of the College Discovery and Development staff were invaluable in maintaining the program's continuity through a change of directorship. Miss Marcia Berhardt, Mr. Francis Etuk, and Miss Phyllis Siegel, Research Assistants, indefatigably carried on an infinite number and variety of daily program tasks. Miss Patricia Manning, Mr. Antonio Rodriguez, and Miss Alice Scharf helped diligently in gathering and processing data. We wish to express here officially our gratitude to Mrs. Beatrice Adelman, Mrs. Ruth Bruskin, and Miss Paulette Satherswaite, project secretaries, for their devotion and competence in the preparation of this report.

Our debt to the principals, their administrative assistants, the school coordinators, guidance counselors and supervisors, chairmen (heads of departments), class teachers and secretaries of the five host high schools can be acknowledged but is too great to describe, much less, to ever repay. Although we have occasionally held variant views, their dedicated efforts far beyond the call of ordinary duty have been a major ingredient in the progress of the College Discovery and Development Program to its present state of health.

We wish also to express our gratitude to the Advisory Policy Committee and especially to its student and parent members. Their courage in keeping the views of participating students and their parents in clear and balanced focus has been a source of major assistance.

Finally, we are grateful to the State of New York, the United States Office of Economic Opportunity, the United States Office of Education, and the Human Resources Administration of the City of New York for their financial support; without it, none of these efforts could have been undertaken.

Lawrence Brody, Director

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CHAPTER I

THE SECOND YEAR OF THE COLLEGE DISCOVERY AND DEVELOPMENT PROGRAM

Program Goals

The basic goals of the College Discovery and Development Program remained essentially unchanged during this second year. These purposes have been described in the Tanner-Lachica report:

> The major objective of the Program is to discover and develop the college potential of disadvantaged youth who, without the benefit of intensive and long-range educational support of a special nature, would be unlikely to enter college.
>
> The specific objectives of the Program are: (1) identify disadvantaged youth who, at the end of the ninth grade, have heretofore been "undiscovered" in their potential for college, (2) to improve their motivation for school work, (3) to improve their levels of achievement in school, (4) to develop their expectations for college entrance, and (5) to improve their chances for success in college.

The Populations Studied

Student Populations. There were two kinds of changes in the student population of the College Discovery and Development Program during its second year. The first of these changes involved those students in Class I, hereafter called CDD I, who left the program during 1966-67. These losses include students dropped from the program by the schools for several causes, those who withdrew for their own reasons and those who were forced to leave because their families had moved outside the city. No new students were added to CDD I during the eleventh grade or junior year of high school study.

The second kind of population change during the second year of the Program involved addition of a second group into the tenth grade in September 1966. This group, hereafter designated as CDD II, was selected from among ninth grade students referred primarily by their school guidance counselors and

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[1] Tanner, Daniel and Lachica, Genaro, Discovering and Developing the College Potential of Disadvantaged High School Youth: A Report of the First Year of a Longitudinal Study on the College Discovery and Development Program, Office of Research and Evaluation, City University of New York, January, 1967, p. 3.

community action programs; social agencies and interested individuals also referred a small number of students.

Selection Criteria

The procedures for selecting CDD II were closely similar to those which had been used in choosing students for CDD I a year before. These criteria were described in the previous report.[2] In summary, these criteria included:

1. Evidence of socio-economic disadvantage, *viz*:
    a. Income.
    b. Life Chances Scale.
2. High potential vs. low academic achievement: Priority in selection was given to students whose records showed greatest discrepancy between apparent potential and ninth grade performance, as seen in:
    a. high academic performance early in student's history with marked decline in later grades.
    b. ninth grade scores on Metropolitan Reading Test above students' actual grade level combined with low academic grades.
    c. high scores on other standardized tests combined with low academic grades.
    d. unevenness of academic performance: i.e. marked discrepancies as between performances in various school subjects.
3. Evidence other than standardized test scores:
    a. Leadership, special aptitudes, creativity and personality factors.
    b. Students autobiographical statements.
    c. Desire to enter program.
    d. School attendance record.
    e. Absence of severe physical and emotional disability.
    f. Age within two years of usual ninth grade placement.

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[2] Tanner, Daniel and Lachica, Genaro, *Discovering and Developing the College Potential of Disadvantaged High School Youth: A Report of the First Year of a Longitudinal Study on The College Discovery and Development Program*, Office of Research and Evaluation, City University of New York, January, 1967, pp. 4-7.

4. Sex Ratio:
Approximately 60% boys to 40% girls.

There were, however, three differences between the procedures used in the selection of CDD II and CDD I populations. Students who participated in the residential summer programs for CDD I had been selected by use of a table of random numbers and the CDD I summer population was therefore a random sample drawn from among the total CDD I group. However, CDD II summer program students were selected from among the total CDD II group by application of certain family income criteria. These economic criteria are summarized in Tables A and B:

PERMISSIBLE MAXIMUM WEEKLY FAMILY INCOME[3]
Non-Farm Families

TABLE A

No. persons in family	Dollars
1	$1,500
2	2,000
3	3,500
4	3,000
5	3,500
6	4,000
7	4,500
8	5,000
9	5,500
10	6,000

Above 10 - add $500 for each additional member

TABLE B

No. persons in family	Dollars
1	$2,000
2	3,000
3	3,500
4	4,000
5	4,500
6	5,000
7	5,500
8	6,000
9	6,500
10	7,000

Above 10 - add $500 for each additional member

Note: 90% of those selected must meet Table A criteria; up to 10% may be selected under Table B criteria.

A second change of selection criteria involved a minor modification of the Life Chances Scale.[4] The Life Chances Scale which had been adapted as one of the screening criteria in selecting the initial group for the program was revised in the selection of the second group. Instead of the highest possible score of 7, a score of 9 became the maximum for the new scale. The item "both parents alive and living together" was split into two i.e., "both parents alive" and "parents living together" and scored -2 points each. A new item (mother: professional, technical, managerial, official, or proprietorial) was added. Two negative items with a score of -1 each were used to arrive at an adjusted Life Chances Score.

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[3] US OEO, Guidelines, Upward Bound, OEO, 1967-68 p. 5.

[4] Dentler, Robert H and Monroe, Lawrence J., "The Family and Early Adolescent Conformity," Marriage and Family Living, XXIII, August, 1961, 3: 241-47.

There were also a very small number of minor exceptions made to the selection criteria in cases where unusual circumstances indicated the desirability of admitting particular children.

In summary, the major changes in student personnel during program year 1966-67 involved losses of enrolled students and the enrollment of an additional second group of students. Detailed information concerning the student populations is included in this report in later chapters (III, IV, V).

Staff Changes

There were a number of staff changes in the College Discovery and Development Program during 1966-67. Dean Harry A. Rivlin, whose ideas had led to the original planning of the program and whose vigorous support contributed strongly to its implementation, retired and left the University during school year 1966-67. Dr. Harold H. Abelson continued active support of this program in his capacity as Acting Dean. The former Director of this program resigned and a new Director was appointed. Dr. Pearl Brod joined the College Discovery and Development staff as Field Coordinator. There were also a number of changes among the staff of research assistants.

There were also changes among the staffs of the College Development Centers in the five high schools, especially at teacher level. Thus, because a second group of 523 students was added to the enrollment in September 1966, a considerably larger number of teachers were needed. Additional teachers were assigned by the principals of the five host schools under the existing agreements between City University and the Board of Education, (supported by a United States Department of Health, Education and Welfare grant to the Board of Education under Title I of the Elementary and Secondary Education Act). In addition, a second guidance counselor was appointed to each College Development Center under the same funding.

The doubling of enrollment, although accompanied by adequately increased school staff in terms of numbers, created new problems of two major kinds. The first of these involved physical facilities. Four of the five host schools were already occupied beyond reasonable capacity; their administrators found it necessary to adopt a variety of ingenious strategies to house the additional students and staff of this program. That they were able to do so effectively is a tribute to their professional talent and commitment to the program and its students.

A second kind of problem involved orientation and development of specialized insights and skills among the teachers newly assigned to College Discovery and Development classes. Efforts to solve these problems are described later in this report in a chapter on curriculum (Chapter VI).

CHAPTER II

PROCEDURES, SUBJECTS, AND INSTRUMENTS

Problems. The major research problem of this longitudinal study is to determine the long range effect of the College Discovery and Development Program on the educational progress of students with educational and socio-economic handicaps. This second report, therefore, will continue the evaluation begun in the first annual report and will not attempt at this point to deal with those problems that can only be answered through long-range study.

The first group (College Discovery and Development Group I, CDD I) now in its second year of the program and in the eleventh grade of high school, will be examined to determine changes in composition of the classes in the different centers.

The second group (College Discovery and Development Group II, CDD II) of entering tenth graders will be described at greater length in terms of socio-economic characteristics, aptitude measures and previous academic record. The second group (CDD II) will also be compared to the first group at intake to determine whether or not these groups are comparable.

The achievement of CDD I in its second year will be compared with the achievement of a corresponding group of academic students (Control I).[1]

The progress in academic performance of CDD I will be evaluated by comparing their present grades with those in the previous year.

The achievement of CDD II will also be compared with the achievement of a comparison group (Control II) as well as the performance of CDD I in its tenth year.[1]

The effect of the summer program on achievement and other related factors will be evaluated by comparing the performance of the participants with those of the non-participants. This will be done for both CDD groups I and II.

Subjects. CDD I consists of 499 subjects who had remained for the second year of the program and were in the eleventh grade of high school. Control I consists of 473 subjects who had been sampled from the population of college preparatory students in the five Development Centers in the tenth grade and who had remained in the same academic program for the eleventh grade of high school.

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[1] The term control refers to an "ideal" comparison group rather than a group of students comparable in aptitude and socio-economic background. c.f. Tanner, Daniel and Lachica, Genaro, Discovering and Developing the College Potential of Disadvantaged High School Youth: A Report of the First Year of a Longitudinal Study on The College Discovery and Development Program. Office of Research and Evaluation, City University of New York, January 1967, p. 20.

CDD II, the second entering group of tenth graders, has 511 subjects. Control II, which is also a comparison group of college preparatory students contains 453 subjects.

Whereas Control I was sampled from among the five Development Centers, those subjects in Control II were only taken from four Development Centers; college preparatory subjects for a comparison group were not made available for testing at one of the Centers.

Instruments. Information collected the previous year on CDD I and Control I will again be used extensively for the present analysis.

For CDD II, background information and previous achievement measures were taken from the application forms filled out by the applicants and guidance counselors prior to admission to the program. Aptitude measures were obtained for both CDD II and Control II by administration of the Differential Aptitude Tests (the Verbal Reasoning, Numerical Ability, and Abstract Reasoning Subtests) and the Stanford Achievement Test (the English and Reading Subtests).

The attendance, final marks and regents scores for both the fall and spring semesters were supplied by the Centers concerned.

Statistical Tools. The descriptive data obtained on both Groups I and II are presented to show differences between the Centers as well as within each Center.

The chi square test was used to determine whether or not significant differences existed in the distribution of students between CDD I and CDD II among Centers on socio-economic variables.

The similarity or disparity of distribution of subjects in CDD II among the Centers was assessed according to various socio-economic categories by the chi square test.

Continuous variables such as grade averages, test scores, attendance, weekly family income and the like are given in terms of means and standard deviations. The analysis of variance is employed to test differences between means. Where the F ratio is significant, the t test is then used to determine the significance of the differences between pairs of means.

In treating the averages of CDD I over four terms, an analysis of variance for repeated measures is used.

In comparing the CDD subjects to the Control subjects by Center, the *t* test was used to make comparisons between means.

Interschool Comparisons. Inferences have not been drawn concerning the causes of differences between Centers. Data have been tabulated by College Discovery Centers, however, for several reasons. It is evident upon even casual examination of the tabulations of descriptive data that there are very important differences between the populations of the five CDD Centers. These population differences are such that essential and operative variables may well be concealed when total group data are considered.

Second, the investigators' interests do not include either general or specific evaluation of any of the schools, their staffs, or of individuals involved in the CDD Program. While it is possible for the reader to attempt to identify the schools and to draw comparative conclusions he is cautioned that the population differences among the schools are complex and great, that the populations of the five centers are not comparable in general but only for the specific characteristics for which each table was constructed. Furthermore, such comparisons, even of data here-in tabulated, can have validity only in terms of the specific times, sources and statistical treatments of each type of data here reported.

Third, data have been tabulated by Center for future convenience: for example, it is planned to study changes in certain attitudes of CDD students during their high school careers. The current descriptive data tabulations, together with those of the previous report and those obtained in the future will be needed in seeking to assess sources of any such attitudinal changes in future studies.

Finally, the reader is advised that use of this report for *ad institutionem*, *ad hominem* or similar purposes is neither anticipated, intended nor approved by its authors whose only purpose is to seek ways by which formerly disadvantaged students may be helped to become more successful with greater satisfactions for themselves and augmented value to society.

CHAPTER III

CHARACTERISTICS OF THE POPULATION

A. CDD I

The initial class of College Discovery students enrolled in the five High School Development Centers included 579 students. Of these, 499 remained in the program at the beginning of the second year. Of the 80 students who failed to come back, 16 had to leave the Program because their families left New York City.

There are presently over all Centers 206 females and 293 males who have remained in the program.

TABLE 1

COLLEGE DISCOVERY ENROLLMENT BY CENTERS
FOR THE ELEVENTH YEAR - CDD I
MALES AND FEMALES

Center	Male		Female		Total
	N	%	N	%	
I	68	59.1	47	40.9	115
II	79	69.9	34	30.1	113
III	53	53.5	46	46.5	99
IV	40	48.8	42	51.2	82
V	53	58.9	37	41.1	90
Total	293	58.7	206	41.3	499

Table 2 represents the ethnic distribution of CDD in its second year. The combined Negro and Puerto Rican populations accounted for 65 per cent of the enrollment. This reflects the same distribution as the previous year. This seems to indicate that the attrition rate for all the ethnic groups involved in the program is the same.

TABLE 2

ETHNIC DISTRIBUTIONS - CDD I

	N	%
Negro	206	42.0
Puerto Rican	111	22.8
Other	172	35.2
Total	489	100.0

B. CDD II

Socio-economic Characteristics at Intake and Comparison to CDD I

Table 3 presents the breakdown by Center and by sex of CDD II. It indicates that 57.3 per cent of the students in CDD II are males. The same proportion of males to females seems to have been approximated in all Centers except for Center I which has a higher percentage of males.

TABLE 3

COLLEGE DISCOVERY ENROLLMENT BY CENTERS
MALES AND FEMALES
CDD II

Center	Male		Female		Total
	N	%	N	%	
I	57	64.0	32	36.0	89
II	67	55.8	53	44.2	120
III	55	55.6	44	44.4	99
IV	61	57.5	45	42.5	106
V	53	54.6	44	45.4	97
Total	293	57.3	218	42.7	511

There is no significant difference ($\chi^2 = 1.78$, $p > .05$) between the number of males and females for CDD II as compared to CDD I. This difference is shown only in Center II where the proportion of females has increased significantly ($\chi^2 = 7.4$, $p < .01$, Table 4).

TABLE 4

COMPARISON OF CDD I AND CDD II
by Sex

Center		I	II	III	IV	V	Total
Males	CDD I	78	87	76	50	64	355
	CDD II	57	67	55	61	53	293
Females	CDD I	53	37	47	51	36	224
	CDD II	32	53	44	45	44	218

Table 5, showing the ethnic distribution at intake of CDD II in comparison with that of CDD I, reveals no significant deviation in ethnic composition ($\chi^2 = 1.71$, $p > .05$).

TABLE 5

COMPARISON OF ETHNIC DISTRIBUTION
FOR CDD I AND CDD II

	Negro	Puerto Rican	Other	Total
Class I	206 (216.5)*	111 (104.6)	172 (167.9)	489
Class II	235 (224.5)	102 (108.4)	170 (174.1)	507
Total	441	213	342	996

*expected frequency

Mean ages of students in months by Center are presented in Table 6. The analysis of variance (Table 7) yielded no significant difference between Centers.

TABLE 6

AGE OF STUDENTS IN MONTHS - CDD II

Center	N	Mean	S.D.
I	87	182.60	22.89
II	119	183.78	18.21
III	99	183.13	19.57
IV	101	182.73	5.60
V	97	185.11	5.73
Total	503	183.50	15.60

TABLE 7

AGE IN MONTHS - CDD II

ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	385.68	4	96.42	.39
Error	122040.06	498	245.06	
Total	122425.74	502		

The data in Table 8 indicates that for 56.9 per cent of CDD II students, both parents are alive and living together. This pattern is almost identical to the one obtained for CDD I as revealed in Table 9 ($\chi^2 = 4.30$, $p > .05$). In fact, the percentage of cases in which both parents are not alive and living together (41.7 per cent) is identical for both groups.

TABLE 8

BOTH PARENTS ALIVE AND LIVING TOGETHER

CDD II

Center	Yes		No		No Information	
	N	%	N	%	N	%
I	40	45.0	48	53.9	1	1.1
II	67	55.8	52	43.3	1	0.9
III	53	53.5	45	45.5	1	1.0
IV	74	69.8	31	29.2	1	1.0
V	57	58.8	37	38.1	3	3.1
Total	291	56.9	213	41.7	7	1.4

TABLE 9

COMPARISON OF CDD I AND CDD II ON THE

NUMBER OF PARENTS ALIVE AND LIVING TOGETHER:

ALL CENTERS

	Yes	No	No Information	Total
CDD I	318 (323.2)*	241 (241.0)	19 (13.8)	578
CDD II	291 (285.8)	213 (213.0)	7 (12.2)	511
Total	609	454	26	1089

*expected frequency

In 68.6 per cent of those cases in which either of the parents or both are missing, the mother is the head of the household (Table 10). This is 27.7 per cent of the total number in CDD II and is comparable to that per cent in CDD I which was 28.0 per cent.

TABLE 10

HEAD OF HOUSEHOLD WHERE PARENTS ARE NOT LIVING TOGETHER

CDD II

Center	Mother & Stepfather		Father & Stepmother		Mother		Father		Guardian		Other	
	N	%	N	%	N	%	N	%	N	%	N	%
I	7	14.6	1	2.1	35	72.9	1	2.1	3	6.3	1	2.1
II	10	17.9	1	1.8	37	66.1	3	5.4	5	8.9	0	0.0
III	2	4.4	2	4.4	34	75.6	3	6.7	4	8.9	0	0.0
IV	5	16.1	1	3.2	20	64.5	3	9.7	1	3.2	1	3.2
V	5	18.5	2	7.4	16	59.3	2	7.4	2	7.4	0	0.0
Total	29	14.0	7	3.4	142	68.6	12	5.8	15	7.2	2	1.0

Even though the data indicates that 56.9 per cent of the students have parents who are living together, it is only in 54.6 per cent of the cases that the CDD II students are living with the parents (Table 11).

TABLE 11

STUDENTS LIVING WITH PARENTS

CDD II

Center	Yes		No		No Information	
	N	%	N	%	N	%
I	38	42.7	51	57.3	0	0.0
II	64	53.3	56	46.7	0	0.0
III	53	53.5	45	45.5	1	1.0
IV	72	67.9	33	31.1	1	1.0
V	52	53.6	42	43.3	3	3.1
Total	279	54.6	227	44.4	5	1.0

Center V is unique in having a higher percentage of CDD II students residing in institutions, which was also the case for CDD I (Table 12). Indeed, there is no significant difference between CDD I and CDD II in the distribution of students over all Centers living with foster parents or in institutions ($\chi^2 = 7.1$, $p > .05$).

TABLE 12

STUDENTS LIVING WITH FOSTER PARENTS AND IN INSTITUTIONS

CDD II

Center	Foster Parents		Institutions	
	N	%	N	%
I	1	1.1	2	2.2
II	1	0.8	0	0.0
III	0	0.0	0	0.0
IV	2	1.9	0	0.0
V	1	1.0	14	14.4
Total	5	1.0	16	3.1

Table 13 indicates that 90.4 per cent of the students in CDD II have fathers who are living and 7.6 per cent have fathers who are deceased. In 38.7 per cent of the cases in which the father is living, he is not living with his children.

TABLE 13

STUDENTS REPORTING FATHERS LIVING OR DECEASED

CDD II

Center	Father Living		Father Deceased		No Information	
	N	%	N	%	N	%
I	84	94.4	4	4.5	1	1.1
II	105	86.8	12	9.9	4	3.3
III	91	91.9	7	7.1	1	1.0
IV	97	91.5	8	7.5	1	0.9
V	86	88.7	8	8.2	3	3.1
Total	463	90.4	39	7.6	10	2.0

As compared to CDD I, there seems to be a significantly higher proportion of cases of students in CDD II who reported their fathers as living ($\chi^2 = 31.3$, $p < .01$, Table 14).

TABLE 14

COMPARISON OF CDD I AND CDD II ON STUDENTS REPORTING FATHERS LIVING OR DECEASED
ALL CENTERS

	Father Living	Father Deceased	No Information	Total
CDD I	468 (493.7)*	53 (48.8)	57 (35.5)	578
CDD II	463 (437.3)	39 (43.2)	10 (31.5)	512
Total	931	92	67	1090

In Table 15, it is seen that 94.7 per cent of the subjects report their mothers as living. However in contrast to the percentage of students who are not living with their fathers, only 7.2 per cent of those who reported their mothers as alive do not have their mothers at home.

TABLE 15

STUDENTS REPORTING MOTHERS LIVING OR DECEASED
CDD II

Center	Mother Living		Mother Deceased		No Information	
	N	%	N	%	N	%
I	85	95.5	3	3.4	1	1.1
II	113	93.4	4	3.3	4	3.3
III	95	96.0	3	3.0	1	1.0
IV	102	96.2	3	2.8	1	0.9
V	90	92.8	4	4.1	3	3.1
Total	485	94.7	17	3.3	10	2.0

*expected frequency

Table 16 indicates no significant difference ($\chi^2 = 1.7$, $p > .05$) between CDD I and CDD II in the proportion of students reporting their mothers to be living.

TABLE 16

COMPARISONS OF CDD I AND CDD II ON STUDENTS
REPORTING MOTHERS LIVING OR DECEASED
ALL CENTERS

	Mother Living	Mother Deceased	No Information	Total
CDD I	538 (542.5)*	22 (20.7)	18 (14.8)	578
CDD II	485 (480.5)	17 (18.3)	10 (13.2)	512
Total	1023	39	28	1090

The mean and standard deviation of the number of persons in the family for each Center of CDD II are given in Table 17.

TABLE 17

NUMBER OF PERSONS IN FAMILY - CDD II

Center	N	Mean	S.D.
I	86	5.36	1.89
II	120	5.50	2.18
III	121	4.31	2.70
IV	106	6.09	2.09
V	83	6.69	2.17
Total	516	5.51	2.39

*expected frequency

The analysis of variance yielded an F value significant at the .01 level; therefore, the average number of persons in the family differs from Center to Center.

TABLE 18

NUMBER OF PERSONS IN FAMILY
CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	562.84	4	140.71	30.20**
Error	2382.13	511	4.66	
Total	2944.97	515		

**significant at the .01 level

Table 19 presents the differences between the means of any two Centers. Center III is significantly lower than any other Center in the number of persons in the family, whereas Center V is significantly higher than any other Center.

TABLE 19

DIFFERENCES BETWEEN CENTERS IN
NUMBER OF PERSONS IN FAMILY
CDD II

Center		V	IV	II	I	III
	Mean	6.69	6.09	5.50	5.36	4.31
V	6.69		.60*	1.19**	1.33**	2.38**
IV	6.09			.59*	.73*	1.78**
II	5.50				.14	1.19**
I	5.36					1.05**
III	4.31					

**significant at the .01 level
*significant at the .05 level

Center IV is shown in Table 20 to have a significantly higher average number of persons in each family for CDD II as compared to CDD I. Over five Centers there is also a significant difference between CDD I and CDD II, in favor of CDD II, in the mean number of persons in the family.

TABLE 20

COMPARISON OF CDD I AND CDD II
ON THE NUMBER OF PERSONS IN FAMILY

Center	Mean		Diff. bet. Means	t
	CDD I	CDD II		
I	5.07	5.36	- .29	-1.04
II	5.31	5.50	- .19	- .73
III	4.66	4.31	.35	1.20
IV	5.45	6.09	- .64	-2.37*
V	5.97	6.69	- .72	- .66
Total	5.24	5.31	- .27	-2.08*

*significant at the .05 level

The mean and standard deviation of the number of rooms per household for CDD II are found in Table 21.

TABLE 21

NUMBER OF ROOMS PER HOUSEHOLD - CDD II

Center	N	Mean	S.D.
I	88	5.05	1.38
II	114	4.98	1.41
III	92	4.79	1.14
IV	101	4.06	3.00
V	93	4.46	3.06
Total	488	4.59	2.18

The analysis of variance yeilded an F value significant at the .05 level (Table 22). Centers I, II and III are significantly higher than Center IV in the mean number of rooms (Table 23).

TABLE 22

NUMBER OF ROOMS PER HOUSEHOLD - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	51.70	4	12.93	2.76*
Error	2260.17	483	4.68	
Total	2311.87	487		

*significant at the .05 level

TABLE 23

DIFFERENCES BETWEEN CENTERS IN NUMBER
OF ROOMS PER HOUSEHOLD
CDD II

Center		I	II	III	V	IV
	Mean	5.05	4.98	4.79	4.46	4.06
I	5.05		.07	.26	.59	.99**
II	4.98			.19	.52	.92**
III	4.79				.33	.73*
V	4.46					.40
IV	4.06					

**significant at the .01 level
*significant at the .05 level

When compared to CDD I across all Centers, CDD II had a significantly lower mean. This trend was reflected in Centers IV and V (Table 24).

TABLE 24

COMPARISON OF CDD I AND CDD II ON THE NUMBER OF ROOMS PER HOUSEHOLD

Center	Mean		Diff. bet. Mean	t
	CDD I	CDD II		
I	4.84	5.05	- .21	.14
II	5.00	4.98	.02	.11
III	4.52	4.79	- .27	-1.69
IV	5.86	4.06	1.80	5.14**
V	6.07	4.46	1.61	6.41**
Total	5.17	4.59	.58	4.90**

**significant at the .01 level

Table 25 indicates that a majority of the fathers of CDD II students were born in the United States North or Canada. A slightly lower percentage of fathers came from the United States South and a still lower number were born in Puerto Rico.

TABLE 25

FATHER'S BIRTHPLACE

CDD II

Center	U.S. North and Canada		U.S. South		Puerto Rico		Other		Don't Know or No Information	
	N	%	N	%	N	%	N	%	N	%
I	28	31.5	23	25.8	14	15.7	17	19.1	7	7.9
II	32	26.7	33	27.5	23	19.1	29	24.2	3	2.5
III	27	27.3	23	23.2	30	30.3	17	17.2	2	2.0
IV	43	40.6	30	28.2	4	3.8	25	23.6	4	3.8
V	56	57.8	8	8.2	12	12.4	14	14.4	7	7.2
Total	186	36.4	117	22.9	83	16.2	102	20.0	23	4.5

CDD I and CDD II do not differ significantly when compared as to birthplace of fathers ($\chi^2 = 2.98$, $p > .05$, Table 26).

TABLE 26

COMPARISON OF CDD I AND CDD II
ON THE FATHER'S BIRTHPLACE
ALL CENTERS

	U.S. North and Canada	U.S. South	Puerto Rico	Other	Total
CDD I	165 (174.6)*	123 (119.4)	99 (90.5)	96 (98.5)	483
CDD II	186 (176.4)	117 (120.6)	83 (91.5)	102 (99.5)	488
Total	351	240	182	198	971

As was true for the fathers, the highest percentage of the mothers were born in the United States or Canada (41.0 per cent), followed by the United States South and Puerto Rico (Table 27).

TABLE 27

MOTHER'S BIRTHPLACE
CDD II

Center	U.S. North and Canada		U.S. South		Puerto Rico		Other		Don't Know or No Information	
	N	%	N	%	N	%	N	%	N	%
I	30	33.7	22	24.7	16	18.0	18	20.2	3	3.4
II	42	35.0	30	25.0	22	18.3	20	16.7	6	5.0
III	28	28.3	23	23.2	30	30.3	18	18.2	0	0.0
IV	54	51.0	25	23.6	8	7.5	17	16.0	2	1.9
V	55	56.7	10	10.3	13	13.4	14	14.4	5	5.2
Total	209	41.0	110	21.5	89	17.4	87	17.0	16	3.1

*expected frequency

The chi square test shows no significant difference between CDD I and CDD II as to birthplace of the mother ($X^2 = 5.89$, $p > .05$, Table 28).

TABLE 28

COMPARISON OF CDD I AND CDD II ON THE BIRTHPLACE OF MOTHER

	U.S. North and Canada	U.S. South	Puerto Rico	Other	Total
CDD I	198 (208.3)*	144 (130.0)	103 (98.3)	74 (82.4)	519
CDD II	209 (198.7)	110 (124.0)	89 (93.7)	87 (78.6)	495
Total	407	254	192	161	1014

A different picture is seen when the birthplace of the students is examined (Table 29). In spite of the fact that only 36.4 per cent of the fathers and 41.0 per cent of the mothers were born in the United States North or Canada, almost 72 per cent of the students themselves were born in the United States North or Canada.

TABLE 29

STUDENT'S BIRTHPLACE CDD II

Center	U.S. North and Canada		U.S. South		Puerto Rico		Other		No Information	
	N	%	N	%	N	%	N	%	N	%
I	57	64.0	10	11.2	6	6.8	14	15.8	2	2.2
II	71	59.2	8	6.7	12	10.0	23	19.1	6	5.0
III	73	73.7	6	6.1	11	11.1	8	8.1	1	1.0
IV	84	79.2	7	6.6	0	0.0	11	10.4	4	3.8
V	82	84.5	2	2.1	4	4.1	9	9.3	0	0.0
Total	367	71.8	33	6.5	33	6.5	65	12.7	13	2.5

*expected frequency

Again, the difference between CDD II and CDD I, when they are compared to birthplace is non-significant ($\chi^2 = 5.44$, $p > .05$, Table 30).

TABLE 30

COMPARISON OF CDD I AND CDD II ON THE STUDENT'S BIRTHPLACE ALL CENTERS

	U.S. North and Canada	U.S. South	Puerto Rico	Other	No Information	Total
CDD I	429 (422.5)*	34 (35.6)	50 (44.1)	53 (62.6)	12 (13.3)	578
CDD II	367 (373.5)	33 (31.4)	33 (38.9)	65 (55.4)	13 (11.7)	511
Total	796	67	83	118	25	1089

The mean and standard deviation for the number of years CDD II students have resided at the present address are given in Table 31. It appears that on the average the students have lived for at least five years at the present location. The analysis of variance yielded no significant differences between Centers as to length of residence at the present address (Table 32).

TABLE 31

NUMBER OF YEARS AT PRESENT ADDRESS - CDD II

Center	N	Mean	S.D.
I	78	6.72	6.38
II	109	5.88	4.46
III	89	7.85	4.68
IV	104	7.35	8.88
V	93	7.10	4.96
Total	473	6.96	5.07

*expected frequency

TABLE 32

NUMBER OF YEARS AT PRESENT ADDRESS - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	220.49	4	55.12	2.16
Error	11965.58	468	25.57	
Total	12186.07	472		

Comparing CDD I and CDD II on the number of years at the present address showed them to be not significantly different (Table 33).

TABLE 33

COMPARISON OF CDD I AND CDD II
ON THE NUMBER OF YEARS AT THE PRESENT ADDRESS

Center	Mean		Diff. bet. Means	t
	CDD I	CDD II		
I	5.35	6.72	-1.37	-1.59
II	6.23	5.88	.35	.65
III	7.13	7.85	- .72	-1.44
IV	7.79	7.35	.44	.43
V	6.38	7.10	- .72	-1.00
Total	6.51	6.96	- .44	-1.42

Only 1.2 per cent of the fathers are employed in a professional occupation. Almost 62 per cent are non-professionals (Table 34). For 37.4 per cent of the students, the fathers are unemployed or no information was obtained. Most of the mothers are housewives only (67.7 per cent), whereas approximately 30 per cent are non-professionals. Only a very small number of mothers are in professional employment (Table 35).

TABLE 34

OCCUPATION: FATHER
CDD II

Center	Professional		Non-Professional		Unemployed or No Information	
	N	%	N	%	N	%
I	0	0.0	47	52.8	42	47.2
II	2	1.7	69	57.5	49	40.8
III	0	0.0	57	57.6	42	42.4
IV	4	3.8	74	69.8	28	26.4
V	0	0.0	67	69.1	30	30.9
Total	6	1.2	314	61.4	191	37.4

TABLE 35

OCCUPATION: MOTHER
CDD II

Center	Professional		Non-Professional		Housewife		No Information	
	N	%	N	%	N	%	N	%
I	0	0.0	21	23.6	67	75.3	1	1.1
II	1	0.8	32	26.7	78	65.0	9	7.5
III	0	0.0	32	32.3	67	67.7	0	0.0
IV	2	1.9	38	35.8	65	61.3	1	1.0
V	0	0.0	26	26.8	69	71.1	2	2.1
Total	3	0.6	149	29.2	346	67.7	13	2.5

Table 36 gives the means and standard deviations for all Centers on total weekly income for CDD II families. The analysis of variance yielded a significant F value ($F = 3.17$, $p < .05$, Table 37), indicating a significant variation in income from Center to Center.

TABLE 36

TOTAL WEEKLY INCOME

CDD II

Center	N	Mean	S.D.
I	83	84.31	28.96
II	112	90.41	32.61
III	93	86.63	32.61
IV	99	114.44	38.12
V	82	122.37	39.20
Total	469	100.24	34.94

TABLE 37

TOTAL WEEKLY INCOME

CDD II

ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	15183.29	4	3795.82	3.17*
Error	557440.00	464	1197.72	
Total	572623.29	468		

*significant at the .05 level

Centers IV and V are significantly higher in family income level than the other three Centers, whereas they are not significantly different from each other.

Centers I, II and III are also not significantly different from each other (Table 38). The higher average income level for Center V is actually inflated because a number of their students live in institutions and foster homes and were ommitted in the analysis of the data.

TABLE 38

DIFFERENCES BETWEEN CENTERS IN TOTAL WEEKLY INCOME
CDD II

Center		V	IV	II	III	I
	Mean	122.37	114.44	90.41	86.63	84.31
V	122.37		7.93	30.96*	35.74**	37.96**
IV	114.44			24.03**	27.81**	30.13**
II	90.41				3.78	6.10
III	86.63					2.32
I	84.31					

**significant at the .01 level
*significant at the .05 level

Table 39 reveals that CDD I and CDD II are not significantly different in the family's total weekly income.

TABLE 39

COMPARISON OF CDD I AND CDD II
ON TOTAL WEEKLY INCOME

Center	Mean		Diff. bet. Means	t
	CDD I	CDD II		
I	89.04	84.31	4.69	1.07
II	94.55	90.41	4.14	.93
III	82.10	86.63	-4.53	-1.01
IV	115.45	114.44	1.01	.19
V	115.38	122.37	-6.99	-1.16
Total	97.53	100.24	-2.71	-1.19

The majority of CDD II families indicated no source of supplementary income. Almost 14 per cent of the families of students cited Aid to Dependent Children or Welfare as a source of supplementary income. In addition to this percentage, some of the 7 per cent of those families who indicated "Any Two of Above" as their sources were also recipients of Welfare and Aid to Dependent Children (Table 40).

TABLE 40

SOURCES OF SUPPLEMENTARY INCOME

CDD II

Center	Part time Employment		Social Security Pensions		ADC		Welfare		Contributions by Family Members		Other		Any Two of Above		None Stated	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
I	2	2.2	5	5.6	7	7.9	8	9.0	8	9.0	6	6.7	11	12.4	42	47.2
II	6	5.0	10	8.3	5	4.1	13	10.7	5	4.1	3	2.5	8	6.6	71	58.7
III	1	1.0	6	6.1	11	11.1	9	9.1	9	9.1	4	4.0	5	5.1	54	54.5
IV	6	5.7	5	4.7	8	7.5	3	2.8	7	6.6	9	8.5	4	3.8	64	60.4
V	1	1.0	8	8.2	5	5.2	2	2.1	6	6.2	7	7.2	8	8.2	60	61.9
Total	16	3.1	34	6.6	36	7.0	35	6.8	35	6.8	29	5.7	36	7.0	291	56.8

Table 41 gives the mean and standard deviations of the monthly rent for CDD II for all Centers.

TABLE 41

MONTHLY RENT - CDD II

Center	N	Mean	S.D.
I	68	78.87	25.03
II	112	87.12	36.12
III	89	67.15	20.45
IV	88	104.52	30.97
V	81	78.90	42.10
Total	438	83.76	34.49

The analysis of variance (Table 42) indicates that there is a significant difference between Centers in monthly rent ($\underline{F} = 16.05$, $p < .01$).

TABLE 42

MONTHLY RENT

CDD II

ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	67303.30	4	16825.83	16.05**
Error	45385.56	433	1048.17	
Total	521160.86	437		

**significant at the .01 level

Center IV had a significantly higher average monthly rent for its CDD II families (Table 43) than that of the other Centers. It was previously shown that the average weekly income for Center IV was also higher. Even though Center V was also shown in Table 38 to have a higher weekly income, it did not show itself to be significantly higher in monthly rent. The mean monthly rent for Center III is significantly lower than all other Centers.

TABLE 43

DIFFERENCES BETWEEN CENTERS IN
MONTHLY RENT
CDD II

Center		IV	II	V	I	III
	Mean	104.52	87.12	78.90	78.87	67.15
IV	104.52		17.40**	25.62**	25.65**	37.37**
II	87.12			8.22	8.25	19.97**
V	78.90				.03	11.75*
I	78.87					11.72*
III	67.15					

**significant at the .01 level
*significant at the .05 level

In Center II, the average monthly rent for CDD II was higher than that of CDD I. The reverse was true for Center V (Table 44). The mean across five Centers for CDD II was also significantly higher than that of CDD I.

TABLE 44

COMPARISON OF CDD I AND CDD II
ON MONTHLY RENT

Center	Mean		Diff. bet. Mean	t
	CDD I	CDD II		
I	75.14	78.87	- 3.73	-1.01
II	74.15	87.12	-12.97	-3.37**
III	63.92	67.15	- 3.23	-1.07
IV	96.70	104.52	- 7.82	- .48
V	92.48	78.90	13.58	2.37*
Total	78.24	83.76	- 5.52	-2.64**

**significant at the .01 level
*significant at the .05 level

The average number of years of schooling of CDD II fathers and the corresponding deviations are listed in Table 45. The analysis of variance yielded a significant F (Table 46) indicating that there was a significant difference between Centers in the educational background of fathers.

TABLE 45

YEARS OF SCHOOLING OF FATHER - CDD II

Center	N	Mean	S.D.
I	71	9.72	2.82
II	104	9.55	3.39
III	84	9.24	3.23
IV	95	10.56	2.81
V	85	10.29	2.82
Total	439	9.88	3.08

TABLE 46

YEARS OF SCHOOLING OF FATHER - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	106.16	4	26.54	2.84*
Error	4048.45	434	9.33	
Total	4154.61	438		

*significant at the .05 level

Inter-Center comparisons of means showed that Center IV was significantly higher in average schooling of father than Center II and Center III. Center V was

2

also found to have a higher mean than Center III (Table 47).

TABLE 47

DIFFERENCES BETWEEN CENTERS IN
SCHOOLING OF FATHER
CDD II

Center		IV	V	I	II	III
	Mean	10.56	10.29	9.72	9.55	9.24
IV	10.56		.27	.84	1.01*	1.32**
V	10.29			.57	.74	1.05*
I	9.72				.17	.48
II	9.55					.31
III	9.24					

**significant at the .01 level
*significant at the .05 level

A comparison of CDD I and CDD II showed that the fathers had no significant difference in educational attainment (Table 48).

TABLE 48

COMPARISON OF CDD I AND CDD II
ON YEARS OF SCHOOLING OF FATHER

Center	Mean		Diff. bet. Means	t
	CDD I	CDD II		
I	9.21	9.72	- .51	-1.07
II	9.97	9.55	.42	.97
III	8.70	9.24	-5.38	-1.05
IV	10.32	10.56	- .24	- .58
V	10.00	10.29	- .29	- .72
Total	9.60	9.88	- .28	-1.40

For mothers of CDD II, the average number of years of schooling and the standard deviation are presented in Table 49. The difference between Centers were shown to be significant at the .01 level($\underline{F} = 5.85$, $p < .01$, Table 50).

TABLE 49

YEARS OF SCHOOLING OF MOTHER - CDD II

Center	N	Mean	S.D.
I	83	9.78	2.62
II	113	9.53	3.15
III	95	9.25	3.17
IV	99	11.01	2.57
V	88	10.27	2.43
Total	478	9.96	2.90

TABLE 50

YEARS OF SCHOOLING OF MOTHER - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	188.71	4	47.18	5.85**
Error	3816.62	473	8.07	
Total	4005.33	477		

**significant at the .01 level

The mothers of students in Center IV had a significantly higher average number of years of schooling than those mothers in Centers I, II, and III. Center

V is statistically higher than only Center III (Table 51).

TABLE 51

DIFFERENCE BETWEEN CENTERS IN SCHOOLING OF MOTHER CDD II

Center		IV	V	I	II	III
	Mean	11.01	10.27	9.78	9.53	9.25
IV	11.01		.74	1.23**	1.48**	1.76**
V	10.27			.49	.74	1.02*
I	9.78				.25	.53
II	9.53					.28
III	9.25					

**significant at the .01 level
*significant at the .05 level

There was no significant difference in the second year of the program in the average number of years of schooling of mothers (Table 52) within individual Centers. The significant difference shown for all Centers is an artifact of the increased number of cases.

TABLE 52

COMPARISON OF CDD I AND CDD II ON YEARS OF SCHOOLING OF MOTHER

Center	Mean		Diff. bet. Means	t
	CDD I	CDD II		
I	9.25	9.78	- .53	-1.26
II	9.62	9.53	- .09	- .22
III	8.56	9.25	- .69	-1.51
IV	10.78	11.01	- .23	- .25
V	10.70	10.27	.43	1.29
Total	9.70	9.96	- .26	-1.96*

*significant at the .05 level

In Table 53, it is seen that the mean of the Adjusted Life Chance Scale score varied from 2.46 through 3.44 from Center to Center. For the total CDD II population the mean score was 2.83. This variation in Center means was shown to be significant since the analysis of variance yielded an F value of 7.38 (p < .01, Table 54).

TABLE 53

ADJUSTED LIFE CHANCE SCORE - CDD II

Center	N	Mean	S.D.
I	88	2.48	1.72
II	116	2.46	1.79
III	97	2.53	1.64
IV	101	3.44	1.71
V	95	3.30	1.94
Total	497	2.83	1.82

TABLE 54

ADJUSTED LIFE CHANCE SCORE
CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	93.62	4	23.40	7.38**
Error	1557.52	492	3.17	
Total	1651.14	496		

**significant at the .01 level

It is shown in Table 55 that Center IV has a higher mean Adjusted Life Chance score than Centers I, II, and III. Likewise, Center V has a higher mean than Centers I, II and III. The other mean differences were found to be insignificant.

TABLE 55

DIFFERENCES BETWEEN CENTERS IN
ADJUSTED LIFE CHANCE SCORE
CDD II

Center		IV	V	III	I	II
	Mean	3.44	3.30	2.53	2.48	2.46
IV	3.44		.14	.91**	.96**	.98**
V	3.30			.77**	.82**	.84**
III	2.53				.05	.07
I	2.48					.02
II	2.46					

**significant at the .01 level

No comparison was made between CDD I and CDD II in Adjusted Life Chance score; the Modified Life Chance Scale used in the first year was slightly modified to become an Adjusted Life Chance score in the second year. Scores on the two instruments are, therefore, non-comparable.

Ninth Grade School Information

This section will present the results of the statistical analyses of school related information taken from the nomination forms. Most of this information were considered in the selection of the students for the program.

One of the factors considered as an indicator of probable success in the program was the student's reading level in the ninth grade as measured by the Metropolitan Reading Test. Table 56 shows that the mean reading grade in the Centers are all 10.00 or better. This shows that on the average the CDD II population was reading above grade level.

TABLE 56

NINTH YEAR READING GRADE LEVEL - CDD II

Center	N	Mean	S.D.
I	81	10.91	1.32
II	104	10.00	1.60
III	85	10.30	1.29
IV	96	10.55	1.29
V	81	10.09	1.31
Total	447	10.36	1.42

Analysis of variance, however, showed there was significant variation in mean reading level between Centers (Table 57). Center I obtained the highest average reading grade which was significantly higher than those for II, III, and V. Center IV came second with a mean higher than II and V (Table 58).

TABLE 57

NINTH YEAR READING GRADE - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	45.57	4	11.39	5.93**
Error	850.10	442	1.92	
Total	895.67	446		

**significant at the .01 level

TABLE 58

DIFFERENCES BETWEEN CENTERS IN
NINTH YEAR READING GRADE
CDD II

Centers		I	IV	III	V	II
	Mean	10.91	10.55	10.30	10.09	10.00
I	10.91		.36	.61**	.82**	.91**
IV	10.55			.25	.46*	.55**
III	10.30				.21	.30
V	10.09					.09
II	10.00					

**significant at the .01 level
*significant at the .05 level

When CDD II was compared to CDD I on ninth year reading grade level, there was no significant difference found across all Centers. Table 59 indicates, however, that significant differences exist for Centers I and II. For Center I, CDD II was significantly higher in mean reading level than CDD I, whereas for Center II, CDD II was significantly lower than CDD I.

TABLE 59

COMPARISON OF CDD I AND CDD II
ON NINTH YEAR READING GRADE LEVEL

Center	Mean CDD I	Mean CDD II	Diff. bet. Mean	t
I	10.28	10.91	- .63	-2.90**
II	10.49	10.00	.49	2.36*
III	10.16	10.30	- .15	- .72
IV	10.69	10.55	.14	.71
V	9.71	10.09	- .38	-1.77
Total	10.28	10.36	- .08	- .80

**significant at the .01 level
*significant at the .05 level

For CDD II, results of the Metropolitan Achievement Test in mathematics were available. In Table 60 are presented the means and standard deviations for each Center and for the total second year population. It can be seen that the students are in general achieving below grade norms in problem solving whereas in reading they were achieving above grade level.

TABLE 60

METROPOLITAN ACHIEVEMENT TEST

MATHEMATICS: PROBLEM SOLVING GRADE LEVEL - CDD II

Center	N	Mean	S.D.
I	73	7.82	1.31
II	81	7.91	1.26
III	82	7.88	1.20
IV	86	8.38	1.22
V	55	7.97	1.06
Total	377	8.00	1.25

The analysis of variance demonstrated significant variability between Centers (Table 61). Center IV with a mean of 8.38 was significantly higher than Centers I, II, and III. The difference between Centers IV and V approaches significance at the .05 level (Table 62).

TABLE 61

METROPOLITAN ACHIEVEMENT TEST: PROBLEM SOLVING

CDD II

ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	16.90	4	4.23	2.80*
Error	561.81	372	1.51	
Total	578.71	376		

*significant at the .05 level

TABLE 62

DIFFERENCES BETWEEN CENTERS IN

METROPOLITAN ACHIEVEMENT TEST: PROBLEM SOLVING

Centers		IV	V	II	III	I
	Mean	8.38	7.97	7.91	7.88	7.82
IV	8.38		.41	.47*	.50**	.56**
V	7.97			.06	.09	.15
II	7.91				.03	.09
III	7.88					.06
I	7.82					

**significant at the .01 level
*significant at the .05 level

Along with the composite percentile score of the Iowa Tests of Educational Development, the subtests considered in the selection of CDD II students were the Quantitative Thinking, and Reading: Social Studies.

An examination of Table 63 shows that in all Centers CDD II students were on the average performing above the 50th percentile. No significant differences between Centers or mean percentile ranks were found (Table 64). The students in the Centers, therefore, were on the average almost identical in their performances on the Quantitative Thinking subtest.

TABLE 63

IOWA TESTS OF EDUCATIONAL DEVELOPMENT:

QUANTITATIVE THINKING PERCENTILE RANK - CDD II

Center	N	Mean	S.D.
I	76	54.79	23.35
II	98	52.56	21.49
III	87	51.45	21.20
IV	99	57.93	20.74
V	89	53.51	20.74
Total	449	54.09	21.67

TABLE 64

ITED: QUANTITATIVE THINKING

CDD II

ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	2363.03	4	590.75	1.26
Error	208467.04	444	469.52	
Total	210830.07	448		

Compared to CDD I, CDD II considered as a whole, performed on the average significantly lower on this subtest. In Table 65, it can be seen that this difference was reflected in Center II (_t_=3.29, p < .01), Center IV (_t_=1.98, p < .05), and Center V (_t_=2.33, p < .05). For Centers I and III, CDD I and CDD II on the average performed equally well on the Quantitative Thinking subtest.

TABLE 65

COMPARISON OF CDD I AND CDD II

ON THE ITED: QUANTITATIVE THINKING SUBTEST

Center	Mean		Diff. bet. Means	t
	CDD I	CDD II		
I	59.35	54.79	4.56	1.30
II	62.36	52.56	9.80	3.29**
III	56.12	51.45	4.67	1.52
IV	65.12	57.93	7.19	1.99*
V	60.24	53.51	6.73	2.33*
Total	60.52	54.09	6.43	4.64**

**significant at the .05 level
*significant at the .01 level

The range of mean percentile ranks for the Social Studies subtest was from 56.43 to 65.15. Table 66 presents the means and standard deviations for this subtest for each Center.

TABLE 66

ITED: SOCIAL STUDIES PERCENTILE RANK

CDD II

Center	N	Mean	S.D.
I	76	65.15	20.67
II	96	60.74	20.70
III	84	58.81	21.07
IV	98	63.11	20.57
V	88	56.43	19.66
Total	442	60.80	20.75

The analysis of variance (Table 67) yielded variability between Centers significant at the .01 level. Inter-Center comparisons of means (Table 68) revealed that Center I was significantly higher than Centers III, and V, and Center IV higher than Center V in performance on the Reading: Social Studies subtest of the ITED.

TABLE 67

ITED: SOCIAL STUDIES PERCENTILE RANK

CDD II

ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	14896.48	4	3724.12	8.73**
Error	186370.21	437	426.47	
Total	201266.69	441		

**significant at the .01 level

TABLE 68

DIFFERENCES BETWEEN CENTERS IN
ITED: SOCIAL STUDIES
CDD II

Center		I	IV	II	III	V
	Mean	65.15	63.11	60.74	58.81	56.43
I	65.15		2.04	4.41	6.34*	8.72**
IV	63.11			2.37	4.30	6.68*
II	60.74				1.93	4.31
III	58.81					2.38
V	56.43					

**significant at the .01 level
*significant at the .05 level

When CDD I and CDD II were compared, there were no significant differences noted within Centers and within CDD populations (Table 69).

TABLE 69

COMPARISON OF CDD I AND CDD II ON THE ITED READING:
SOCIAL STUDIES PERCENTILE RANK

Center	Mean		Diff. bet. Means	t
	CDD I	CDD II		
I	61.98	65.15	-3.17	- .95
II	63.04	60.74	2.30	.76
III	57.45	58.81	-1.36	- .40
IV	66.30	63.11	3.19	.99
V	58.12	56.43	1.69	.52
Total	61.30	60.80	.50	.35

The ITED gives a composite standard score which is converted to percentile ranks. The means and standard deviations for these percentile ranks are reported for each Center and for the total CDD II group (Table 70).

TABLE 70

ITED COMPOSITE PERCENTILE RANK - CDD II

Center	N	Mean	S.D.
I	76	69.04	14.61
II	96	62.12	17.87
III	82	62.20	15.89
IV	99	67.97	16.21
V	88	59.53	15.17
Total	441	64.12	16.47

The mean percentile rank varies from 59.53 to 69.04. This variation was shown by analysis of variance (Table 71) to be significant at the .01 level. The consequent comparison of means between Centers showed that the subjects in Centers I and IV performed better than those in Centers II, III, and V. (Table 72.)

TABLE 71

COMPOSITE ITED SCORE - PERCENTILE RANK - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	5847.08	4	1461.77	5.60**
Error	113782.31	436	260.97	
Total	119629.39	440		

**significant at the .01 level

TABLE 72

DIFFERENCES BETWEEN CENTERS IN
COMPARISON ITED SCORE - PERCENTILE RANK - CDD II

Center		I	IV	III	II	V
	Mean	69.04	67.97	62.20	62.12	59.53
I	69.04		1.07	6.84**	6.92**	9.51**
IV	67.97			5.77*	5.85*	8.44**
III	62.20				.08	2.67
II	62.12					2.59
V	59.53					

**significant at the .01 level
*significant at the .05 level

While CDD I was shown to have a higher composite average than CDD II in one of the Centers (Center II), the difference between the total means was largely attributable to sampling error (Table 73). Like the initial group CDD II, as a group, had above average performance on the ITED.

TABLE 73

COMPARISON OF CDD I AND CDD II ON
THE ITED COMPOSITE PERCENTILE RANK

Center	Mean		Diff. bet. Means	t
	CDD I	CDD II		
I	66.62	69.04	-2.42	-1.10
II	67.57	62.12	5.45	2.52*
III	62.26	62.20	.07	.03
IV	71.39	67.97	3.42	1.47
V	61.91	59.53	2.38	1.10
Total	65.87	64.12	1.75	1.71

*significant at the .05 level

The general average of the students in the fall term of their ninth year was one of the key criteria considered in selecting candidates for the program. The object was to select students who show indications of potential ability but whose marks in school were below the standards of admission to the units of the City University of New York.

Table 74 shows that on the average in all five Centers, the means of the general average for all CDD II students cluster about 75. The analysis of variance indicated that there were no significant differences between the Centers for CDD II students on their general averages for ninth grade (Table 75).

TABLE 74

NINTH YEAR AVERAGE - CDD II

Center	N	Mean	S.D.
I	87	74.28	7.46
II	115	75.57	8.78
III	97	75.80	6.60
IV	106	73.85	6.24
V	97	73.44	8.20
Total	502	74.62	7.60

TABLE 75

NINTH YEAR AVERAGE - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	448.70	4	112.18	1.95
Error	28572.30	497	57.49	
Total	29021.00	501		

When CDD II was compared to CDD I over all Centers a significant difference existed (t=2.05, $p < .05$, Table 76). In Center IV, CDD II subjects performed lower than CDD I subjects in their ninth year.

TABLE 76

COMPARISON OF CDD I AND CDD II
ON NINTH YEAR AVERAGE

Center	Mean		Diff. bet. Means	t
	CDD I	CDD II		
I	74.52	74.28	.24	.22
II	75.31	75.57	- .26	- .25
III	76.43	75.80	.63	.64
IV	76.88	73.85	3.03	3.20**
V	75.14	73.44	1.70	1.30
Total	75.61	74.62	.99	2.05*

**significant at the .01 level
*significant at the .05 level

Data concerning fall absences in the ninth grade are displayed in Table 77. An inter-Center comparison of mean number of absences indicated significant differences in ninth grade attendance for CDD II students (Table 78). Center V had a lower absentee rate than Centers I and II (Table 79).

TABLE 77

NINTH YEAR FALL ABSENCES - CDD II

Center	N	Mean	S.D.
I	89	7.67	7.22
II	114	7.53	6.28
III	97	5.81	5.88
IV	107	6.88	6.73
V	98	5.29	6.59
Total	505	6.65	6.60

TABLE 78

DAYS ABSENT FALL NINTH YEAR - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	436.61	4	109.15	2.53*
Error	21586.05	500	43.17	
Total	22022.66	504		

*significant at the .05 level

TABLE 79

DIFFERENCES BETWEEN CENTERS IN
FALL ABSENCES - NINTH YEAR - CDD II

Center		I	II	IV	III	V
	Mean	7.67	7.53	6.88	5.81	5.29
I	7.67		.14	.79	1.86	2.38*
II	7.53			.65	1.72	2.24*
IV	6.88				1.07	1.59
III	5.81					.52
V	5.29					

*significant at the .05 level

When CDD II and CDD I subjects were compared, CDD II students had a significantly higher mean absentee rate than CDD I students for their ninth year. This trend is reflected in every Center and to a significant degree in Center IV (Table 80).

TABLE 80

COMPARISON OF CDD I AND CDD II
ON DAYS ABSENT IN FALL OF NINTH GRADE

Center	Mean CDD I	 CDD II	Diff. bet. Means	t
I	6.32	7.67	-1.35	-1.36
II	7.09	7.53	- .44	- .47
III	4.49	5.81	-1.32	-1.54
IV	4.66	6.88	-2.22	-2.59**
V	4.47	5.29	- .82	- .81
Total	5.49	6.65	-1.16	-2.76**

**significant at the .01 level

Aptitude

As was done the previous year, a battery of tests was administered in the early fall to all CDD II and Control II students. In Center III, a comparison group was not made available for testing or data collection. Therefore, in the ensuing comparisons of CDD II and Control II data on aptitude and achievement, only four Centers were considered. When CDD II students are discussed as a group in terms of aptitude and achievement measures, all five Centers were taken into account.

The mean raw score values of the Verbal Reasoning subtest of the Differential Aptitude Tests for CDD II ranged from 24.47 to 28.67. Table 81 gives the mean raw score values and standard deviations. The analysis of variance showed significant differences between Center means (Table 82). Center IV scored higher than Centers II, III, and V on the Verbal Reasoning subtest (Table 83).

TABLE 81

DAT: VERBAL REASONING - CDD II

Center	N	Mean	S.D.
I	74	26.58	7.64
II	112	25.75	8.54
III	91	25.14	7.78
IV	93	28.67	8.46
V	93	24.47	7.80
Total	463	26.09	8.22

TABLE 82

DAT: VERBAL REASONING - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	973.01	4	243.25	3.68**
Error	30310.00	458	66.18	
Total	31283.01	462		

**significant at the .01 level

TABLE 83

DIFFERENCES BETWEEN CENTERS IN
DAT: VERBAL REASONING - CDD II

Center		IV	I	II	III	V
	Mean	28.67	26.58	25.75	25.14	24.47
IV	28.67		2.08	2.92**	3.53**	4.20**
I	26.58			.83	1.44	2.11
II	25.75				.61	1.28
III	25.14					.67
V	24.47					

**significant at the .01 level

Only in Center II was there a significance difference between CDD I and CDD II in their performance on Verbal Reasoning (Table 84).

TABLE 84

COMPARISON OF CDD I AND CDD II
ON THE DAT: VERBAL REASONING SUBTEST

Center	Mean		Diff. bet. Mean	t
	CDD I	CDD II		
I	25.27	26.58	-1.31	-1.13
II	27.90	25.75	2.15	2.05*
III	25.88	25.14	.74	.71
IV	29.75	28.67	1.08	.93
V	25.81	24.47	1.34	1.20
Total	26.83	26.09	.74	1.47

*significant at the .05 level

The comparison of CDD II and Control II revealed that in Centers I and II, the CDD group performed better than the Control group; however in Center IV, the reverse was observed. Table 85 shows no difference between the CDD and Control groups when the subjects in the four Centers were considered.

TABLE 85

COMPARISON OF CDD II AND CONTROL II
ON THE DAT: VERBAL REASONING SUBTEST

Center	Mean		Diff. bet. Mean	t
	CDD II	Control II		
I	26.58	22.98	3.60	2.56*
II	25.75	21.73	4.02	3.40**
IV	28.67	31.21	-2.54	-2.04*
V	24.47	26.41	-1.94	-1.56
Total	26.33	25.87	.46	.70

**significant at the .01 level
*significant at the .05 level

Table 86 displays the mean and standard deviation of the Numerical Ability subtest of the Differential Aptitude Tests. For CDD II the raw scores ranged from 17.84 to 20.06. Significant variation was observed between Centers in average performance on the Numerical Ability subtest (Table 87).

TABLE 86

DAT: NUMERICAL ABILITY SUBTEST - CDD II

Center	N	Mean	S.D.
I	74	17.84	5.99
II	112	20.06	5.77
III	91	19.07	5.33
IV	93	21.69	5.83
V	93	19.10	5.48
Total	463	19.64	5.81

TABLE 87

DAT: NUMERICAL ABILITY - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	707.89	4	176.97	5.43**
Error	14924.31	458	32.59	
Total	15632.20	462		

**significant at the .01 level

The subsequent comparisons of Center means revealed that Center IV obtained a higher average than that of any other Center. Center II also obtained a higher mean than Center I (Table 88).

TABLE 88

DIFFERENCES BETWEEN CENTERS IN

DAT: - NUMERICAL ABILITY - CDD II

Center		IV	II	V	III	I
	Mean	21.69	20.06	19.10	19.07	17.84
IV	21.69		1.63*	2.59**	2.62**	3.85**
II	20.06			.96	.99	2.22**
V	19.10				.03	1.26
III	19.07					1.23
I	17.84					

**significant at the .01 level
*significant at the .05 level

The overall average performance of CDD II on Numerical Ability was significantly lower than that of CDD I (Table 89). Although the differences in all the five Centers were in favor of CDD I, only in Center IV was the obtained difference in means significant.

TABLE 89

COMPARISON OF CDD I AND CDD II

ON THE DAT: NUMERICAL ABILITY SUBTEST

Center	Mean CDD I	Mean CDD II	Diff. bet. Means	t
I	18.93	17.84	1.09	1.18
II	20.72	20.06	.66	.87
III	19.81	19.07	.74	.94
IV	23.92	21.69	2.23	2.63**
V	21.03	19.10	1.93	1.84
Total	20.74	19.64	1.10	2.92**

**significant at the .01 level

Control II as a group scored significantly better than CDD II on Numerical Ability. This better performance of Control II was reflected in Centers IV and V (Table 90).

TABLE 90

COMPARISON OF CDD II AND CONTROL II
ON THE DAT: NUMERICAL ABILITY SUBTEST

Center	Mean CDD II	 Control II	Diff. bet. Means	t
I	17.84	17.30	.54	.50
II	20.06	18.85	1.21	1.45
IV	21.69	26.59	-4.90	-5.57**
V	19.10	21.56	-2.46	-3.02**
Total	19.64	21.43	-1.79	-3.98**

**significant at the .01 level

The combined Verbal Reasoning and Numerical Ability score is considered a stable measure of scholastic aptitude. The results for CDD II are summarized in Table 91.

TABLE 91

DAT: VERBAL REASONING AND
NUMERICAL ABILITY SUBTESTS - CDD II

Center	N	Mean	S.D.
I	74	44.37	10.00
II	112	45.86	11.24
III	91	44.21	10.01
IV	93	50.37	11.10
V	93	43.57	10.70
Total	463	45.74	10.94

The analysis of variance showed the Centers to be significantly variable in their obtained means (Table 92). The mean of the combined score for Center IV was significantly higher than the mean for any other Center (Table 93).

TABLE 92

DAT: VERBAL REASONING AND NUMERICAL ABILITY

CDD II

ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	2782.64	4	695.66	6.04**
Error	52764.26	458	115.21	
Total	55546.90	462		

**significant at the .01 level

TABLE 93

DIFFERENCES BETWEEN CENTERS IN

DAT: VERBAL REASONING AND NUMERICAL ABILITY

CDD II

Center		IV	II	I	III	V
	Mean	50.37	45.86	44.37	44.21	43.57
IV	50.37		4.51**	6.00**	6.16**	6.80**
II	45.86			1.49	1.65	2.29
I	44.37				.16	.80
III	44.21					.67
V	43.57					

**significant at the .01 level

When CDD I and CDD II were compared on the combined scores it was seen that CDD I was significantly higher ($p < .01$) than CDD II, a trend which was repeated in Centers II, IV and V (Table 94).

TABLE 94

COMPARISON OF CDD I AND CDD II
ON THE DAT: VERBAL REASONING
AND NUMERICAL ABILITY

Center	Mean CDD I	Mean CDD II	Diff. bet. Means	t
I	44.19	44.37	- .18	- .15
II	48.68	45.86	2.82	2.06*
III	45.69	44.21	1.48	1.05
IV	53.66	50.37	3.29	2.07*
V	46.85	43.57	3.28	2.09*
Total	47.59	45.74	1.85	2.65**

**significant at the .01 level
*significant at the .05 level

While CDD II performed better than Control II in Centers I and II, the Control II group outdid the CDD group in Centers IV and V; thus no significant difference was found between the total means (Table 95).

TABLE 95

COMPARISON OF CDD II AND CONTROL II
ON THE DAT: VERBAL REASONING
AND NUMERICAL ABILITY

Center	Mean CDD II	Mean Control II	Diff. bet. Means	t
I	44.37	40.11	4.26	2.05*
II	45.86	40.38	5.48	3.20**
IV	50.37	57.85	-7.48	-4.15**
V	43.57	47.99	-4.42	-2.53*
Total	46.12	47.23	-1.11	-1.14

**significant at the .01 level
*significant at the .05 level

Data on the Abstract Reasoning subtest are presented in Table 96.

TABLE 96

DAT: ABSTRACT REASONING - CDD II

Center	N	Mean	S.D.
I	94	33.08	7.38
II	112	33.10	5.59
III	91	33.43	6.47
IV	93	33.95	7.24
V	93	32.94	7.13
Total	463	33.30	6.74

The analysis of variance revealed that the five Centers showed relative homogeneity in their performance on the Abstract Reasoning subtest (Table 97).

TABLE 97

DAT: ABSTRACT REASONING

CDD II

ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	60.80	4	15.20	.33
Error	20960.07	458	45.65	
Total	21020.87	462		

No differences emerged in the comparison of CDD I and CDD II on this particular variable (Table 98).

TABLE 98

COMPARISON OF CDD I AND CDD II
ON THE DAT: ABSTRACT REASONING

Center	Mean		Diff. bet.	
	CDD I	CDD II	Means	t
I	32.85	33.08	- .23	- .21
II	33.10	33.10	.00	.00
III	33.57	33.43	.14	.15
IV	35.51	33.95	1.56	1.53
V	33.27	32.94	.33	.35
Total	33.59	33.30	.30	.69

When CDD II was compared to its Control group, no significant differences were found for the total means. Nevertheless, in Center II, the CDD group obtained a significantly higher mean than the Control group on the Abstract Reasoning subtest (Table 99).

TABLE 99

COMPARISON OF CDD II AND CONTROL II
ON THE DAT: ABSTRACT REASONING

Center	Mean		Diff. bet.	
	CDD I	CDD II	Mean	t
I	33.08	30.81	2.27	1.64
II	33.10	29.80	3.30	2.90**
IV	33.95	35.23	-1.28	-1.17
V	32.94	33.66	- .72	- .67
Total	33.27	32.54	.73	1.27

**significant at the .01 level

Administered at the same time as the Differential Aptitude Tests were the English and Reading subtests of the Stanford Achievement Test. For CDD II, the mean raw scores on the English subtest ranged from 46.79 to 52.75 as indicated in Table 100.

TABLE 100

STANFORD ACHIEVEMENT TEST: ENGLISH

Center	N	Mean	S.D.
I	74	50.67	12.16
II	112	48.97	10.37
III	91	52.75	9.29
IV	93	53.46	9.52
V	93	46.79	10.79
Total	463	50.45	10.69

The variation among Centers on the mean values for the English subtest proved to be significant (Table 101). Both Centers III and IV were higher than Centers II and V (Table 102). Center I was higher than Center V only.

TABLE 101

STANFORD ACHIEVEMENT TEST:
ENGLISH - CDD II

Source	SS	df	MS	F
Center	2820.97	4	705.24	6.45**
Error	50089.48	458	109.37	
Total	52910.45	462		

**significant at the .01 level

TABLE 102

DIFFERENCES BETWEEN CENTERS IN
STANFORD ACHIEVEMENT TEST: ENGLISH
CDD II

Centers		IV	III	I	II	V
	Mean	53.62	52.75	50.66	48.97	46.79
IV	53.62		.87	2.96	4.65**	6.83**
III	52.75			2.09	3.78*	5.96**
I	50.66				1.69	3.87*
II	48.97					2.18
V	46.79					

**significant at the .01 level
*significant at the .05 level

Table 103 shows that there was no difference between the CDD I and CDD II population in English ability as sampled by the Stanford Achievement Test. Only in Centers II and V did CDD I emerge significantly higher than CDD II.

TABLE 103

COMPARISON OF CDD I AND CDD II
ON THE STANFORD ACHIEVEMENT TEST: ENGLISH

Center	Mean CDD I	 CDD II	Diff. bet. Means	t
I	51.39	50.67	.72	.38
II	52.06	48.97	3.09	2.31*
III	50.26	52.75	-2.49	-1.76
IV	55.20	53.46	1.74	1.30
V	49.80	46.79	3.01	2.06
Total	51.69	50.45	1.24	1.83

*significant at the .05 level

When all the Centers were combined, there was no significant difference between CDD II and Control II on their average performance (Table 104). However, in Centers IV and V, the control groups were observed to be better than the CDD groups; but in Center I, the CDD group obtained a higher mean value than Control II.

TABLE 104

COMPARISON OF CDD II AND CONTROL II
ON
STANFORD ACHIEVEMENT TEST: ENGLISH

Center	Mean		Diff. bet. Mean	t
	CDD II	Control II		
I	50.66	43.86	6.81	3.23**
II	48.97	47.59	1.38	.88
IV	53.46	57.77	-4.31	-2.91**
V	46.79	51.00	-4.21	-2.55*
Total	49.88	50.61	- .73	- .83

**significant at the .01 level
*significant at the .05 level

On the Reading subtest of the Stanford Achievement Test, the mean values for CDD II for all Centers ranged from 31.39 to 36.23. Table 105 lists the mean and standard deviation for each Center. An examination of the variability of means between Centers showed significant differences (Table 106). Center IV, as for the Differential Aptitude Tests and the English subtest of the Stanford Achievement Test obtained a significantly higher mean on the Reading subtest. Except for Center I, Center IV scored higher than each of the other Centers. Center I also scored higher than Centers II and V, while Center III obtained a significantly higher mean than only Center V (Table 107).

TABLE 105
STANFORD ACHIEVEMENT TEST: READING
CDD II

Center	N	Mean	S.D.
I	74	34.11	8.13
II	112	31.39	8.15
III	91	33.13	7.52
IV	93	36.23	7.94
V	93	29.71	7.26
Total	463	32.80	8.12

TABLE 106
STANFORD ACHIEVEMENT TEST: READING
CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	2338.03	4	584.51	9.51**
Error	28223.69	459	61.49	
Total	30561.72	462		

**significant at the .01 level

TABLE 107

DIFFERENCES BETWEEN CENTERS IN

STANFORD ACHIEVEMENT TEST: READING

CDD II

Center		IV	I	III	II	V
	Mean	36.23	34.11	33.13	31.39	29.71
IV	36.23		2.12	3.10**	4.84**	6.52**
I	34.11			.98	2.72**	4.40**
III	33.13				1.74	3.42**
II	31.39					1.68
V	29.71					

**significant at the .01 level

Although in Center V, CDD I performed better than CDD II, the difference between the two groups was reduced to insignificance when all the Centers were considered (Table 108).

TABLE 108

COMPARISON OF CDD I AND CDD II

ON

THE STANFORD ACHIEVEMENT TEST: READING

Center	Mean		Diff. bet. Means	t
	CDD I	CDD II		
I	32.39	34.11	-1.72	-1.33
II	32.98	31.39	1.59	1.60
III	32.69	33.13	- .44	- .40
IV	37.10	36.23	.87	.77
V	32.52	29.71	2.81	2.62**
Total	33.46	32.80	.66	1.29

**significant at the .01 level

Although no significant differences existed between Control II and CDD II on the Reading subtest, significant differences in favor of the Control group were obtained for Center IV and in favor of the CDD group for Center I (Table 109)

TABLE 109

COMPARISON OF CDD II AND CONTROL II ON THE STANFORD ACHIEVEMENT TEST: READING

Center	Mean CDD I	 CDD II	Diff. bet. Means	t
I	34.11	30.06	4.05	2.63**
II	31.39	29.49	1.90	1.64
IV	36.23	41.26	-5.03	-3.97**
V	29.71	29.54	.17	.14
Total	32.72	32.96	- .24	- .35

**significant at the .01 level

SUMMARY

The data presented in the Chapter seem to indicate that in general both CDD I and CDD II have been sampled from the same population in terms of socioeconomic background. The only differences were found in the number of subjects reporting fathers living (CDD II > CDD I), the number of persons in the family (CDD II > CDD I), the number of rooms per household (CDD I > CDD II), and the monthly rent (CDD II > CDD I).

The two groups again are comparable in their ninth grade averages and reading levels; however CDD I performed better on the *Iowa Tests of Educational Development*. The groups performed equally well in the aptitude tests administered in the early fall of the tenth year, except in numerical ability in which case CDD I obtained a higher overall mean.

In the comparison of CDD II with Control II in terms of tested aptitude, the groups are essentially the same except for performance on the *Differential Aptitude Tests*: Numerical Ability subtest (Control II > CDD II).

Inter-Center comparisons showed significant variability among the five Centers on most of the variables, but no one particular Center emerged as having consistently higher scores than the others. The subpopulations in the five Centers are not equated groups as to aptitude, socioeconomic status, and previous educational background; and therefore no valid inferences as to superiority of achievement in any one Center can be drawn from analysis of achievement data.

CHAPTER IV

ACHIEVEMENT AND ATTENDANCE

This chapter will deal with the academic performance and attendance of both Class I and Class II. The achievement of CDD I and Control I in the second year will be described and then compared to their previous year's achievement to show whether or not there have been any gains in performance over two years.

The achievement of CDD II and Control II in the tenth year will be described, with comparisons of CDD II performance to the performance of CDD I in its first year of the program.

The measures of achievement used will be the final average for both the fall and spring semesters as well as regents grades.

Various limitations have to be kept in mind in reading the results of the inter-Center comparisons of achievement measures. The general averages are subject to several sources of variability such as school and teacher differences in marking procedures and number and content of subjects taken. Furthermore, it was noted in Chapter III that the classes in the Centers differ in terms of aptitude, socio-economic background, and previous achievement.

The general average for CDD I in the fall semester of the eleventh grade ranged from 71.13 to 75.56 with a mean of 72.99 for all five Centers. Table 110 gives the mean and standard deviation of the fall general average for each Center.

TABLE 110

FALL GENERAL AVERAGE - CDD I

Center	N	Mean	S.D.
I	79	73.33	9.66
II	110	73.60	9.18
III	98	71.13	9.79
IV	68	75.56	7.18
V	82	71.92	7.67
Total	437	72.99	8.98

The analysis of variance (Table 111) yielded an F value significant at the .05 level. Inter-Center comparisons showed that Center IV was significantly higher than Centers III and V in general average for the fall semester (Table 112).

TABLE 111

FALL GENERAL AVERAGE

CDD I

ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	931.54	4	232.89	2.93*
Error	34302.38	432	79.40	
Total	35233.92	436		

*significant at the .05 level

TABLE 112

DIFFERENCES BETWEEN CENTERS IN FALL GENERAL AVERAGE - CDD I

Center		IV	II	I	V	III
	Mean	75.56	73.60	73.33	71.92	71.13
IV	75.56		1.96	2.23	3.64**	4.43**
II	73.60			.27	1.68	2.47
I	73.33				1.41	2.20
V	71.92					.79
III	71.13					

**significant at the .01 level

A significant difference was found between CDD I and Control I in fall general average across Centers in favor of the Control group. This higher mean average for the Control group was reflected in Centers III, IV and V when within Center comparisons were made (Table 113).

TABLE 113

COMPARISON OF CDD I AND CONTROL I
ON THE FALL GENERAL AVERAGE

Center	Mean		Diff. bet. Means	t
	CDD I	Control I		
I	73.33	72.76	.57	.29
II	73.60	74.97	-1.37	- .75
III	71.13	75.89	-4.76	-3.09**
IV	75.56	84.77	-9.21	-7.65**
V	71.92	76.80	-4.88	-3.40**
Total	72.99	76.68	-3.69	-4.97**

**significant at the .01 level

When males and females were compared in overall fall general average, the females obtained a mean (75.10) significantly higher at the .01 level than that obtained by the males (71.60).

Table 114 summarizes achievement data for all Centers for the Spring semester.

TABLE 114

SPRING GENERAL AVERAGE - CDD I

Center	N	Mean	S.D.
I	100	68.46	12.17
II	105	71.71	11.88
III	103	67.51	13.48
IV	79	73.47	7.36
V	83	70.31	8.67
Total	470	70.14	11.39

The comparison of means yielded an F value significant at the .01 level (Table 115). Center IV was again found to be significantly higher than Centers III and V on the mean spring average in addition to performing higher than Center I. Center II obtained a mean which was significantly higher than Center III.

TABLE 115

SPRING GENERAL AVERAGE - CDD I
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	2132.19	4	533.05	4.21**
Error	58859.97	465	126.58	
Total	60992.16	469		

**significant at the .01 level

TABLE 116

DIFFERENCES BETWEEN CENTERS IN
SPRING GENERAL AVERAGE - CDD I

Center		IV	II	V	I	III
	Mean	73.47	71.71	70.31	68.46	67.51
IV	73.47		1.76	3.16*	5.01**	5.96**
II	71.71			1.40	3.25	4.20*
V	70.31				1.85	2.80
I	68.46					.95
III	67.51					

**significant at the .01 level
*significant at the .05 level

The comparison of CDD I to Control I on general average for all Centers yielded a difference in favor of the Control group which was significant. The Control group for Centers III, IV and V obtained substantially higher means than the CDD group when semester means were compared within Centers (Table 117).

TABLE 117

COMPARISON OF CDD I AND CONTROL I
ON THE SPRING GENERAL AVERAGE

Center	Mean		Diff. bet. Means	t
	CDD I	Control I		
I	68.46	71.69	-3.23	-1.85
II	71.71	73.75	-2.04	-1.12
III	67.51	75.83	-8.32	-4.71**
IV	73.47	81.31	-7.84	-6.71**
V	70.31	74.02	-3.71	-2.75**
Total	70.14	75.08	-4.94	-6.57**

**significant at the .01 level

As in the fall semester, the females were found to have performed academically significantly better than the males. The mean obtained for the females for all Centers (72.22) was significantly higher at the .01 level than the value obtained by the males (68.74).

In order to obtain a picture of how the students had progressed academically over the four semesters an analysis of variance, repeated measures design, was used for each Center.

The results of the separate analyses of variance for CDD I for each Center are presented in the following tables.

TABLE 118

CENTER I

ANALYSIS OF VARIANCE - CDD I
GENERAL AVERAGE OVER FOUR SEMESTERS

Source	SS	df	MS	F
Between People	20094.25	76		
Within People	12856.75	231		
Semesters	1307.96	3	435.99	8.61**
Residual	11548.79	228	50.65	
Total	32951.00	307		

**significant at the .01 level

TABLE 119

CENTER II

ANALYSIS OF VARIANCE - CDD I
GENERAL AVERAGE OVER FOUR SEMESTERS

Source	SS	df	MS	F
Between People	21940.05	102		
Within People	8846.50	309		
Semesters	1145.29	3	481.76	19.92**
Residual	7401.21	306	24.19	
Total	30786.55	411		

**significant at the .01 level

TABLE 120

CENTER III

ANALYSIS OF VARIANCE - CDD I
GENERAL AVERAGE OVER FOUR SEMESTERS

Source	SS	df	MS	F
Between People	24624.65	84		
Within People	10860.00	255		
Semesters	2254.51	3	751.50	22.00**
Residual	8605.49	252	34.15	
Total	35484.65	339		

**significant at the .01 level

TABLE 121

CENTER IV

ANALYSIS OF VARIANCE - CDD I
GENERAL AVERAGE OVER FOUR SEMESTERS

Source	SS	df	MS	F
Between People	9233.99	76		
Within People	4650.75	231		
Semesters	331.83	3	110.61	5.84**
Residual	4318.92	228	18.94	
Total	13884.74	307		

**significant at the .01 level

TABLE 122

CENTER V
ANALYSIS OF VARIANCE - CDD I
GENERAL AVERAGE OVER FOUR SEMESTERS

Source	SS	df	MS	F
Between People	17919.11	81		
Within People	7147.25	246		
Semesters	1916.03	3	638.68	29.67**
Residual	5231.22	243	21.53	
Total	25066.36	327		

**significant at the .01 level

All the F values were significant at the .01 level indicating significant variability from term to term. To test whether the changes in mean general average were significant, the Duncan's New Multiple Range Test was employed. Results of separate tests for each Center are presented in Tables 123, 124, 125, 126, and 127.

TABLE 123

CENTER I - CDD I
GENERAL AVERAGE - FOUR TERMS
DIFFERENCES BETWEEN MEANS

Term		Fall 10	Spring 10	Fall 11	Spring 11
	Mean	75.57	74.39	73.44	70.04
Fall 10	75.57		1.18	2.13	5.53**
Spring 10	74.39			.95	4.35**
Fall 11	73.44				3.40**
Spring 11	70.04				

**significant at the .01 level

TABLE 124

GENERAL AVERAGE - FOUR TERMS
CENTER II - CDD I
DIFFERENCES BETWEEN MEANS

Term		Fall 10	Spring 10	Fall 11	Spring 11
	Mean	77.52	75.94	75.09	72.36
Fall 10	77.52		1.58*	2.43**	5.16**
Spring 10	75.94			.85	3.58**
Fall 11	75.09				2.73**
Spring 11	72.36				

**significant at the .01 level
 *significant at the .05 level

TABLE 125

GENERAL AVERAGE - FOUR TERMS
CENTER III - CDD I
DIFFERENCES BETWEEN MEANS

Term		Fall 10	Spring 10	Fall 11	Spring 11
	Mean	75.09	74.09	70.72	68.68
Fall 10	75.09		1.00	4.37**	6.41**
Spring 10	74.09			3.37*	5.41**
Fall 11	70.72				2.04*
Spring 11	68.68				

**significant at the .01 level
 *significant at the .05 level

TABLE 126

GENERAL AVERAGE - FOUR TERMS
CENTER IV - CDD I
DIFFERENCES BETWEEN MEANS

Term		Spring 10	Fall 10	Fall 11	Spring 11
	Mean	76.64	75.42	75.21	73.21
Spring 10	76.64		1.22	1.43	3.41**
Fall 10	75.42			.21	2.21**
Fall 11	75.21				2.00**
Spring 11	73.21				

**significant at the .01 level

TABLE 127

GENERAL AVERAGE - FOUR TERMS
CENTER V - CDD I
DIFFERENCES BETWEEN MEANS

Term		Fall 10	Spring 10	Fall 11	Spring 11
	Mean	76.50	74.72	72.05	70.21
Fall 10	76.50		1.78*	4.45**	6.29**
Spring 10	74.72			2.67**	4.51**
Fall 11	72.05				1.84*
Spring 11	70.21				

**significant at the .01 level
*significant at the .05 level

In general, there was a decreasing trend in final average over the four semesters.

In a similar analysis of variance for the Control groups, only Center III yielded a significant F ratio for the four semesters (Tables 128, 129, 130, 131, and 132). The comparison of means for this Center showed that the 1965 fall term mean general average was significantly higher than that for the 1966 fall term. Tables 133, 134, 135, 136, and 137 indicate the general average means for each semester and the differences between each pair of means for each Center. This analysis showed a relative stability in performance for the Control population over the four semesters.

TABLE 128

CENTER I
ANALYSIS OF VARIANCE - CONTROL I
GENERAL AVERAGE OVER FOUR SEMESTERS

Source	SS	df	MS	F
Between People	20653.66	46		
Within People	7951.25	141		
Semesters	242.27	3	80.76	1.45
Residual	7708.98	138	55.86	
Total	28604.91	187		

TABLE 129

CENTER II
ANALYSIS OF VARIANCE - CONTROL I
GENERAL AVERAGE OVER FOUR SEMESTERS

Source	SS	df	MS	F
Between People	22433.30	43		
Within People	3168.50	132		
Semesters	77.52	3	25.84	1.08
Residual	3090.98	129	23.96	
Total	25601.80	175		

TABLE 130

CENTER III
ANALYSIS OF VARIANCE - CONTROL I
GENERAL AVERAGE OVER FOUR SEMESTERS

Source	SS	df	MS	F
Between People	13635.75	47		
Within People	3865.50	144		
Semesters	228.75	3	76.25	2.96*
Residual	3636.75	141	25.79	
Total	17501.25	191		

*significant at the .05 level

TABLE 131

CENTER IV
ANALYSIS OF VARIANCE - CONTROL I
GENERAL AVERAGE OVER FOUR SEMESTERS

Source	SS	df	MS	F
Between People	5228.81	51		
Within People	1722.50	156		
Semesters	31.42	3	10.47	.95
Residual	1691.08	153	11.05	
Total	6951.31	207		

TABLE 132

CENTER V

ANALYSIS OF VARIANCE - CONTROL I

GENERAL AVERAGE OVER FOUR SEMESTERS

Source	SS	df	MS	F
Between People	11379.60	34		
Within People	52921.25	105		
Semesters	3037.56	3	1012.52	2.07
Residual	49883.69	102	489.06	
Total	64300.85	139		

TABLE 133

CENTER I

DIFFERENCES BETWEEN MEANS - CONTROL I

GENERAL AVERAGE - FOUR TERMS

Term		Fall 10	Fall 11	Spring 11	Spring 10
	Mean	74.77	73.45	73.38	71.57
Fall 10	74.77		1.32	1.39	3.20
Fall 11	73.45			.07	1.88
Spring 11	73.38				1.81
Spring 10	71.57				

TABLE 134

CENTER II

DIFFERENCES BETWEEN MEANS - CONTROL I
GENERAL AVERAGE OVER FOUR TERMS

Term		Fall 10	Fall 11	Spring 10	Spring 11
	Mean	79.82	79.50	78.68	78.14
Fall 10	79.82		.32	1.14	1.68
Fall 11	79.50			.82	1.36
Spring 10	78.68				.54
Spring 11	78.14				

TABLE 135

CENTER III

DIFFERENCES BETWEEN MEANS - CONTROL I
GENERAL AVERAGE OVER FOUR TERMS

Term		Fall 10	Spring 10	Spring 11	Fall 11
	Mean	79.50	78.63	77.50	76.63
Fall 10	79.50		.87	2.00	2.87**
Spring 10	78.63			1.13	2.00
Spring 11	77.50				.87
Fall 11	76.63				

**significant at the .01 level

TABLE 136

CENTER IV

DIFFERENCES BETWEEN MEANS - CONTROL I

GENERAL AVERAGE OVER FOUR TERMS

Term		Fall 11	Spring 10	Spring 11	Fall 10
	Mean	84.77	84.75	84.44	83.81
Fall 11	84.77		.02	.33	.96
Spring 10	84.75			.31	.94
Spring 11	84.44				.63
Fall 10	83.81				

TABLE 137

CENTER V

DIFFERENCES BETWEEN MEANS - CONTROL I

GENERAL AVERAGE OVER FOUR TERMS

Term		Fall 10	Fall 11	Spring 11	Fall 10
	Mean	78.09	76.80	74.40	66.11
Fall 10	78.09		1.29	4.49	11.98*
Fall 11	76.80			2.40	10.69
Spring 11	74.40				8.29
Spring 10	66.11				

*significant at the .01 level

Tables 138 and 139 present the number and per cent of students who have failed a given number of subjects.

TABLE 138

NUMBER OF SUBJECTS FAILED PER STUDENT
CDD I - FALL 1966

	0		1		2		3		4+		
CENTER	N	%	N	%	N	%	N	%	N	%	TOTAL
I	54	55.1	27	27.5	12	12.2	1	1.0	4	4.0	98
II	72	64.8	22	19.8	11	9.9	1	0.9	5	4.5	111
III	50	49.5	28	27.7	11	10.8	9	8.9	3	2.9	101
IV	48	62.3	21	27.2	5	6.4	2	2.5	1	1.2	77
V	42	51.2	24	29.2	9	10.9	4	4.8	3	3.6	82
Total	226	56.7	122	26.0	48	10.2	17	3.6	16	3.4	469

TABLE 139

NUMBER OF SUBJECTS FAILED PER STUDENT
CDD I - SPRING 1967

	0		1		2		3		4+		
CENTER	N	%	N	%	N	%	N	%	N	%	TOTAL
I	35	33.6	36	34.6	19	18.2	8	7.6	6	5.7	10
II	59	55.1	30	28.0	10	9.3	4	3.7	4	3.7	107
III	29	38.1	19	25.0	16	21.0	6	7.8	6	7.8	76
IV	60	75.0	8	10.0	9	11.2	2	2.5	1	1.2	80
V	45	56.2	16	20.0	9	11.2	7	8.7	3	3.7	80
Total	228	51.0	109	24.3	63	14.0	27	6.0	20	4.4	447

The means and standard deviations of the foreign language regents for CDD I in the eleventh year for each Center appear in Table 140. The analysis of variance showed significant variability between Center means (Table 141). Center II performed significantly higher than Centers III and V in foreign language regents. Center IV also scored higher on the average than Center V (Table 142).

TABLE 140

FOREIGN LANGUAGE REGENTS - CDD I

Center	N	Mean	S.D.
I	54	73.00	15.28
II	50	76.42	11.77
III	55	69.26	19.05
IV	59	73.41	10.36
V	75	68.47	14.14
Total	293	71.80	14.70

TABLE 141

FOREIGN LANGUAGE REGENTS - CDD I
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	2486.99	4	621.75	2.94*
Error	60815.53	288	211.17	
Total	63302.52	292		

*significant at the .05 level

TABLE 142

DIFFERENCES BETWEEN CENTERS IN FOREIGN LANGUAGE REGENTS CDD I

Center		II	IV	I	III	V
	Mean	76.42	73.41	73.00	69.26	68.47
II	76.42		3.01	3.42	7.16**	7.95**
IV	73.41			.41	4.15	4.94**
I	73.00				3.74	4.53
III	69.26					.79
V	68.47					

**significant at the .01 level

It must be borne in mind that these scores were based on different languages as well as levels, therefore limiting to some degree the kind of inference that can be made.

Although significant differences in favor of the Control groups were observed for Centers III and IV, when the total Control and CDD populations were compared, the difference was reduced to non-significance (Table 143).

TABLE 143

COMPARISON OF CDD I AND CONTROL I ON THE FOREIGN LANGUAGE REGENTS

Center	Mean		Diff. bet. Means	t
	CDD I	Control I		
I	73.00	75.46	-2.46	- .65
II	76.42	77.44	-1.02	- .37
III	69.26	80.08	-10.82	-3.10**
IV	73.41	81.23	-7.82	-3.20**
V	68.47	70.90	-2.43	-1.07
Total	71.80	76.53	-4.73	-1.63

**significant at the .01 level

For the science regents, means ranged from 63.86 to 68.40 for CDD I in the eleventh year. The means and corresponding standard deviations are listed in Table 144. What should be kept in mind is that the means obtained for the different Centers were not all based on the same science regents. For example, the means for Centers I, II and III were based on students' performance on the chemistry regents, while for Center IV the science regents taken were chemistry and physics. The science regents taken in Center V were chemistry and earth science.

TABLE 144

SCIENCE REGENTS - CDD I

Center	N	Mean	S.D.
I	34	65.32	15.53
II	57	63.86	12.94
III	48	65.40	12.51
IV	40	64.80	10.39
V	83	68.40	10.44
Total	262	65.91	25.28

The analysis of variance yielded no significant difference in means between Centers (Table 145).

TABLE 145

SCIENCE REGENTS - CDD I
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	826.90	4	206.73	1.38
Error	38620.08	257	150.27	
Total	39446.98	261		

In the comparison of CDD I and Control I on performance on the Science regents within Centers, Control I obtained consistently a higher mean than CDD I. Only in Center I was the difference not significant (Table 146).

TABLE 146

COMPARISON OF CDD I AND CONTROL I
ON THE SCIENCE REGENTS

Center	Mean CDD I	Mean Control I	Diff. bet. Means	t
I	65.32	71.64	- 6.32	-1.65
II	63.86	74.61	-10.75	-3.60**
III	65.40	74.65	- 9.25	-2.62**
IV	64.80	80.61	-15.81	-7.63**
V	68.40	79.66	-11.26	-5.46**
Total	65.91	76.93	-11.02	-8.08**

**significant at the .01 level

For the eleventh year math regents, means and standard deviations are presented in Table 147.

TABLE 147

ELEVENTH YEAR MATH REGENTS - CDD I

Center	N	Mean	S.D.
I	9	77.22	12.53
II	12	78.83	14.58
III	42	55.98	22.23
IV	43	68.88	13.89
V	19	75.05	9.63
Total	125	66.42	18.58

The analysis of variance yielded an F value significant at the .01 level (Table 148). Center III was found to be significantly lower than all other Centers on the mean obtained for the eleventh year math regents. Center II also performed better on the average than Center IV (Table 149).

TABLE 148

ELEVENTH YEAR MATH REGENTS - CDD I
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	8416.95	4	2104.24	7.26**
Error	34779.58	120	289.83	
Total	43196.53	124		

**significant at the .01 level

TABLE 149

DIFFERENCES BETWEEN CENTERS IN
ELEVENTH YEAR MATH REGENTS

Center		II	I	V	IV	III
	Mean	78.83	77.22	75.05	68.88	55.97
II	78.83		1.61	3.78	9.95*	22.68**
I	77.22			2.17	8.34	21.30**
V	75.05				6.16	19.08**
IV	68.88					12.91**
III	55.97					

**significant at the .01 level
*significant at the .05 level

The comparison of CDD I and Control I across all Centers on eleventh year math regents performance showed a significant difference in favor of the Control group (Table 150). This trend was reflected in all the Centers. Only in Center I was the difference in mean performance between the CDD group and the Control group not found to be significant.

TABLE 150

COMPARISON OF CDD I AND CONTROL I
ON THE ELEVENTH YEAR MATH REGENTS

Center	Mean		Diff. bet. Means	t
	CDD I	Control I		
I	77.22	79.96	- 2.74	- .51
II	78.83	91.79	-12.96	-2.53*
III	55.98	77.08	-21.10	-4.58**
IV	68.88	80.24	-11.36	-4.09**
V	75.05	82.86	- 7.81	-2.26*
Total	66.42	81.28	-14.86	-7.32**

**significant at the .01 level
*significant at the .05 level

Some CDD I students in the eleventh year also took the tenth year math regents. The means and standard deviations are reported in Table 151. The analysis of variance yielded a non-significant F value (Table 152).

TABLE 151

TENTH YEAR MATH REGENTS - CDD I

Center	N	Mean	S.D.
I	24	58.25	14.25
II	41	61.10	15.07
III	25	50.44	19.51
IV	12	64.58	15.29
V	32	55.47	21.53
Total	134	57.57	18.09

TABLE 152

TENTH YEAR MATH REGENTS - CDD I

ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	2526.87	4	631.72	1.97
Error	41332.03	129	320.40	
Total	43858.90	133		

No within-Center comparisons were made between CDD I and Control I because of the large discrepancy between the number of CDD I and Control I students who took the tenth year math regents.

Attendance data for the fall semester for CDD I are summarized in Table 153. The _F_ value of 3.95 showed significant variability in absenteeism from Center to Center (Table 154).

TABLE 153

FALL ABSENCES - CDD I

Center	N	Mean	S.D.
I	99	6.42	7.54
II	101	7.13	7.36
III	80	5.11	5.62
IV	68	7.77	5.17
V	82	4.28	5.04
Total	430	6.15	8.61

TABLE 154

FALL ABSENCES - CDD I
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	651.19	4	162.80	3.95**
Error	17507.29	425	41.19	
Total	18158.48	429		

**significant at the .01 level

Center V had a significantly lower absentee rate than Centers I, II and IV, while Center III was significantly lower than Centers II and IV (Table 155).

TABLE 155

DIFFERENCES BETWEEN CENTERS IN
FALL ABSENCES - CDD I

Center		IV	II	I	III	V
	Mean	7.77	7.13	6.42	5.11	4.28
IV	7.77		.64	1.35	2.66*	3.49**
II	7.13			.71	2.02*	2.85**
I	6.42				1.31	2.14*
III	5.11					.83
V	4.28					

**significant at the .01 level
*significant at the .05 level

Table 156 contains the within Center comparisons of mean absentee rate for CDD I and Control I. Since no attendance information was available in Center III for the Control I group, no comparison was made. For the other four Centers, however, no significant difference was found between the CDD I and Control I group for mean number of fall absences.

TABLE 156

COMPARISON OF CDD I AND CONTROL I
ON FALL ABSENCES

Center	Mean		Diff. bet. Means	t
	CDD I	Control I		
I	6.42	7.29	- .87	- .57
II	7.13	11.61	- 4.48	- .55
IV	7.77	5.50	2.27	1.92
V	4.28	4.66	- .38	- .62
Total	6.39	6.60	- .21	- .35

For the spring semester, the attendance data are given in Table 157 for CDD I.

TABLE 157

SPRING ABSENCES - CDD I

Center	N	Mean	S.D.
I	99	10.42	9.37
II	99	10.87	9.72
III	84	6.81	8.19
IV	59	7.71	6.35
V	82	6.43	5.90
Total	423	8.66	8.49

The analysis of variance indicated significant variability between Center mean absences (Table 158). Both Centers III and V were found to be significantly lower on the average number of spring absence rate (Table 159).

TABLE 158

SPRING ABSENCES - CDD I

ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	1540.72	4	385.18	5.58**
Error	28926.58	419	69.04	
Total	30467.30	423		

**significant at the .01 level

TABLE 159

DIFFERENCES BETWEEN CENTERS IN

SPRING ABSENCES - CDD I

Center		II	I	IV	III	V
	Mean	10.87	10.42	7.71	6.81	6.43
II	10.87		.45	3.16*	4.06**	4.44**
I	10.42			2.71	3.61**	3.99**
IV	7.71				.90	1.28
III	6.81					.38
V	6.43					

**significant at the .01 level
*significant at the .05 level

Again, as with the fall absence information, no data was available on the Control I group for Center III. The comparison of CDD I and Control I across all Centers on mean spring absences yielded a significant difference between the two groups in favor of Control I (Table 160). For Center IV the Control group was also found to have a significantly higher mean absenteerate for the spring semester.

TABLE 160

COMPARISON OF CDD I AND CONTROL I
ON SPRING ABSENCES

Center	Mean CDD I	 Control I	Diff. bet. Means	t
I	10.42	9.34	1.08	.44
II	10.87	14.38	-3.51	- .71
IV	7.71	11.53	-3.82	-2.48*
V	6.43	7.16	- .73	- .71
Total	9.12	10.20	-1.08	-2.37*

*significant at the .05 level

For the total year absences, means and standard deviations are presented in Table 161. The _F_ value obtained indicated significant variability between Center mean total year absences (Table 162). Centers III and V were found to be significantly lower than Centers I and II in total absentee rate, while Center IV was also found to be lower than Center II (Table 163).

TABLE 161

TOTAL YEAR ABSENCES - CDD I

Center	N	Mean	S.D.
I	99	16.85	14.29
II	99	17.72	15.36
III	79	12.24	13.08
IV	58	13.24	12.49
V	82	10.71	9.92
Total	417	14.47	13.63

TABLE 162

TOTAL YEAR ABSENCES - CDD I
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	3245.08	4	811.27	4.50**
Error	74204.85	412	180.11	
Total	77449.93	416		

**significant at the .01 level

TABLE 163

DIFFERENCES BETWEEN CENTERS IN
TOTAL YEAR ABSENCES - CDD I

Center		II	I	IV	III	V
	Mean	17.72	16.85	13.24	12.24	10.71
II	17.72		.87	4.48*	5.48**	7.01**
I	16.85			3.61	4.61*	6.14
IV	13.24				1.00	2.53
III	12.24					1.53
V	10.71					

**significant at the .01 level
*significant at the .05 level

There was no significant difference found between CDD I and Control I across all Centers on the mean total absence, yet for Center IV the Control group was shown to be significantly higher in absenteeism (Table 164).

TABLE 164

COMPARISON OF CDD I AND CONTROL I
ON TOTAL YEAR ABSENCES

Center	Means CDD I	 Control I	Diff. bet. Means	t
I	16.85	16.71	.44	.06
II	17.72	24.08	-6.36	-1.00
IV	13.24	19.35	-6.11	-2.69**
V	10.71	11.82	-1.11	- .69
Total	14.99	16.12	-1.13	- .86

**significant at the .01 level

When the total year absence for CDD I in its tenth year was compared to the eleventh year across all Centers, the difference was non-significant (Table 165). Only for Center III was the within-Center comparison significant. For this Center, CDD I students were absent less often in the eleventh year than in the tenth year.

TABLE 165

COMPARISON OF TENTH AND ELEVENTH GRADE
TOTAL YEAR ABSENCES - CDD I

Center	Means 10th	 11th	Diff. bet. Means	t
I	19.22	16.85	2.37	1.26
II	16.89	17.72	- .83	- .41
III	20.32	12.24	8.08	3.49**
IV	10.27	13.24	-2.97	-1.55
V	11.66	10.71	.95	.64
Total	16.07	14.47	1.60	1.75

**significant at the .01 level

CDD II

Means and standard deviations of fall semester general averages for CDD II students by Center are listed in Table 166.

TABLE 166

FALL GENERAL AVERAGE - CDD II

Center	N	Mean	S.D.
I	79	71.22	12.86
II	116	75.49	9.82
III	98	75.92	9.54
IV	93	71.53	6.25
V	96	69.06	8.57
Total	482	72.83	9.91

The analysis of variance indicated significant variability between Center fall general average means (Table 167). Both Centers II and III were found to have performed on the average significantly higher than Centers I, IV and V, as shown in Table 168.

TABLE 167

FALL GENERAL AVERAGE - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	3482.91	4	870.73	9.47**
Error	43862.48	477	91.95	
Total	47345.39	481		

**significant at the .01 level

TABLE 168

DIFFERENCES BETWEEN CENTERS IN
FALL GENERAL AVERAGE - CDD II

Center		III	II	IV	I	V
	Mean	75.92	75.49	71.53	71.22	69.06
III	75.92		.43	4.39**	4.70**	6.86**
II	75.49			3.96**	4.27**	6.43**
IV	71.53				.31	2.47
I	71.22					2.16
V	69.06					

**significant at the .01 level

Analysis of variance across all Centers also showed the females with a mean fall average of 74.99 to be significantly higher than the males in performance with a mean fall average of 71.18 ($\underline{F} = 18.33$, $p < .01$).

The comparison of CDD II to Control II across all Centers resulted in a difference significant at the .01 level in favor of the Control group (Table 169). A higher performing Control group was seen in Centers IV and V, when within Center comparisons were made.

TABLE 169

COMPARISON OF CDD II AND CONTROL II ON FALL GENERAL AVERAGE

Center	Means		Diff. bet. Means	t
	CDD II	Control II		
I	71.22	72.86	-1.64	- .74
II	75.49	72.59	2.90	1.77
IV	71.53	78.54	-7.01	-5.82**
V	69.06	72.39	-3.33	-2.43*
Total	72.04	74.39	-2.35	-2.93**

**significant at the .01level
*significant at the .05 level

When the mean fall average for CDD II across all Centers was compared to the performance of CDD I in the tenth grade fall semester, a significant difference was found in favor of CDD I. In both Centers IV and V, CDD I outperformed CDD II in the fall semester of the first year in the program (Table 170).

TABLE 170

COMPARISON OF CDD I AND CDD II ON TENTH GRADE FALL GENERAL AVERAGE

Center	Means		Diff. bet. Means	t
	CDD I	CDD II		
I	72.35	71.22	1.13	.65
II	76.17	75.49	.68	.57
III	73.55	75.92	-2.37	-1.71
IV	73.84	71.53	2.31	2.28*
V	74.66	69.06	5.60	4.43**
Total	74.14	72.83	1.31	2.20*

**significant at the .01 level
*significant at the .05 level

For the spring semester, means and corresponding standard deviations for general average are given in Table 171. The analysis of variance showed significant differences between Center means (Table 172). Table 173 shows that Centers II, III and IV did better than Center I academically for the spring semester.

TABLE 171

SPRING GENERAL AVERAGE - CDD II

Center	N	Mean	S.D.
I	78	68.89	14.03
II	110	73.62	12.17
III	95	71.08	9.90
IV	92	71.55	7.95
V	96	67.49	10.41
Total	471	70.67	11.23

TABLE 172

SPRING GENERAL AVERAGE - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	2264.03	4	566.01	4.61**
Error	57160.97	466	122.66	
Total	59425.00	470		

**significant at the .01 level

TABLE 173

DIFFERENCES BETWEEN CENTERS IN
SPRING AVERAGE - CDD II

Centers		II	IV	III	I	V
	Mean	73.62	71.55	71.08	68.89	67.49
II	73.62		2.07	2.54	4.73**	6.13**
IV	71.55			.47	2.66	4.06*
III	71.08				2.19	3.59*
I	68.89					1.40
V	67.49					

**significant at the .01 level
*significant at the .05 level

The females with a mean spring average of 72.56 performed significantly higher than the males with a mean of 69.18 ($\underline{F} = 11.94$, $p < .01$).

The comparison of the CDD II group to the Control II group yielded significant differences in favor of the Control group (Table 174). Centers IV and V reflected this trend with higher performing Control groups than CDD groups.

TABLE 174

COMPARISON OF CDD II AND CONTROL II
ON THE SPRING GENERAL AVERAGE

Center	Means		Diff. bet. Means	t
	CDD II	Control II		
I	68.89	68.22	.67	.24
II	73.62	71.74	1.88	1.22
IV	71.55	80.32	-8.77	-7.08**
V	67.49	72.23	-4.74	-3.20**
Total	70.57	73.77	-3.22	-3.60**

**significant at the .01 level

Table 175 indicates that the CDD I group obtained a significantly higher mean spring average than the CDD II group when comparisons were made across all Centers. In Centers IV and V, CDD I also performed higher than CDD II.

TABLE 175

COMPARISON OF CDD I AND CDD II
ON THE TENTH YEAR SPRING GENERAL AVERAGE

Center	Means		Diff. bet. Means	t
	CDD I	CDD II		
I	70.88	68.89	1.99	.99
II	74.39	73.62	.77	.52
III	71.27	71.08	.19	.12
IV	79.77	71.55	8.22	6.90**
V	72.40	67.49	4.91	3.21**
Total	72.78	70.67	2.22	3.11**

**significant at the .01 level

Tables 176 and 177 present the number and per cent of students in each Center according to number of subjects failed.

TABLE 176

NUMBER OF SUBJECTS FAILED PER STUDENT

CDD II - FALL 1966

	0		1		2		3		4+		
Center	N	%	N	%	N	%	N	%	N	%	TOTAL
I	46	57.5	18	22.5	8	10.0	7	8.7	1	1.2	80
II	76	66.6	18	15.7	16	14.0	3	2.6	1	0.8	114
III	67	68.3	19	19.3	8	8.1	3	3.0	1	1.0	98
IV	52	55.9	29	31.1	11	11.8	1	1.0	0	0.0	93
V	46	48.4	26	27.3	15	15.7	6	6.3	2	2.1	95
Total	287	59.7	110	22.9	58	12.0	20	4.1	5	1.0	480

TABLE 177

NUMBER OF SUBJECTS FAILED PER STUDENT

CDD II - SPRING 1967

	0		1		2		3		4+		
Center	N	%	N	%	N	%	N	%	N	%	TOTAL
I	37	46.8	20	25.3	8	10.1	6	7.5	8	10.1	79
II	67	59.8	28	25.0	9	8.0	6	5.3	2	1.7	112
III	40	41.2	38	39.1	10	10.3	5	5.1	4	4.1	97
IV	56	60.8	16	17.3	13	14.1	5	5.4	2	2.1	92
V	42	43.7	16	16.6	21	21.8	12	12.3	5	5.2	96
Total	242	50.8	118	24.7	61	12.8	34	7.1	21	4.4	476

The means and standard deviations for the foreign language regents for CDD II are given in Table 178.

TABLE 178

FOREIGN LANGUAGE REGENTS - CDD II

Center	N	Means	S.D.
I	33	72.12	4.90
II	29	77.28	14.45
III	61	72.80	14.98
IV	64	75.20	11.37
V	32	67.69	15.42
Total	219	73.25	13.20

The analysis of variance demonstrated significant variability between Center means (Table 179). Both Centers II and IV performed on the average significantly better than Center V (Table 180).

TABLE 179

FOREIGN LANGUAGE REGENTS CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	1758.51	4	439.62	2.58*
Error	36410.18	214	170.14	
Total	38168.69	218		

*significant at the .05 level

3

TABLE 180

DIFFERENCES BETWEEN CENTERS IN FOREIGN LANGUAGE REGENTS - CDD II

Center		II	IV	III	I	V
	Mean	77.28	75.20	72.80	72.12	67.69
II	77.28		2.08	4.48	5.16	9.59**
IV	75.20			2.40	3.08	7.51**
III	72.80				.68	5.11
I	72.12					4.43
V	67.69					

**significant at the .01 level

When the CDD II group was compared to the Control II group in their performance on the foreign language regents, the mean obtained by the Control group was higher across all Centers. Within Centers I and IV the mean obtained for the Control group was higher than that of the CDD group (Table 181).

TABLE 181

COMPARISON OF CDD II AND CONTROL II ON THE FOREIGN LANGUAGE REGENTS

Center	Mean		Diff. bet. Means	t
	CDD II	Control II		
I	72.12	79.54	-7.72	-3.46**
II	77.28	76.93	.35	.11
IV	75.20	84.25	-9.05	-5.16**
V	67.69	70.81	-3.12	- .90
Total	73.42	78.65	-5.23	-3.92**

**significant at the .01 level

For the science regents, data for CDD II performance are listed in Table 182. The F value was significant at the .01 level, indicating the means between Centers to be statistically different (Table 183). Centers III and IV performed significantly higher on the average than Centers I, II, and V, when Center means were compared (Table 184).

TABLE 182

SCIENCE REGENTS - CDD II

Center	N	Means	S.D.
I	77	69.03	17.75
II	105	68.10	11.30
III	96	74.20	11.70
IV	84	73.14	10.28
V	96	65.99	10.36
Total	458	70.02	12.75

TABLE 183

SCIENCE REGENTS - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	4519.37	4	1129.84	7.31**
Error	69982.52	453	154.49	
Total	74501.89	457		

**significant at the .01 level

TABLE 184

DIFFERENCES BETWEEN CENTERS IN SCIENCE REGENTS - CDD II

Center		III	IV	I	II	V
	Mean	74.20	73.14	69.03	68.10	65.99
III	74.20		1.06	5.17**	6.10**	8.21**
IV	73.14			4.11*	5.04**	7.15**
I	69.03				.93	3.04
II	68.10					2.11
V	65.99					

**significant at the .01 level
*significant at the .05 level

The CDD II group was compared to the Control II group across all Centers on mean performance on the science regents. The total Control group performed significantly better. This better performance was reflected in Centers II, IV and V (Table 185).

TABLE 185

COMPARISON OF CDD II AND CONTROL II ON THE TENTH YEAR SCIENCE REGENTS

Center	Means		Diff. bet. Means	t
	CDD II	Control II		
I	69.03	69.81	- .78	- .30
II	68.10	71.52	-3.42	-1.99*
IV	73.14	80.48	-7.34	-4.69**
V	65.99	73.03	-7.04	-4.14**

**significant at the .01 level
*significant at the..05 level

When the performance of CDD II was compared to CDD I, only within Center III was a significant difference found (Table 186).

TABLE 186

COMPARISON OF CDD I AND CDD II
ON TENTH YEAR SCIENCE REGENTS

Center	Means		Diff. bet. Means	t
	CDD I	CDD II		
I	64.83	69.03	-4.20	-1.80
II	68.88	68.10	.78	.53
III	67.69	74.20	-6.51	-5.73**
IV	73.66	73.14	.52	.37
V	63.46	65.99	-2.53	-1.44
Total	67.66	68.91	-1.25	-1.57

**significant at the .01 level

The means and standard deviations for the CDD II group on the tenth year geometry regents are shown in Table 187. The analysis of variance showed the difference between Center means to be non-significant (Table 188).

TABLE 187

TENTH YEAR GEOMETRY REGENTS - CDD II

Center	N	Mean	S.D.
I	25	74.64	12.33
II	54	68.50	22.44
III	47	68.75	14.11
IV	73	66.11	17.18
V	40	61.63	20.12
Total	239	67.31	18.41

TABLE 188

TENTH YEAR GEOMETRY REGENTS

CDD II

ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	2914.39	4	728.60	2.18
Error	78072.68	234	333.64	
Total	80987.07	238		

The comparison of CDD II to Control II across all Centers revealed a significant difference in average performance in favor of the Control group (Table 189). Centers IV and V also indicated better performance for the Control group.

TABLE 189

COMPARISON OF CDD II AND CONTROL II ON THE TENTH YEAR GEOMETRY REGENTS

	Mean		Diff. bet.	
Center	CDD II	Control II	Means	t
I	74.64	66.33	8.31	1.96
II	68.50	75.07	-6.57	-1.62
IV	66.11	82.78	-16.67	-6.43**
V	61.63	78.34	-16.71	-4.43**
Total	66.96	78.22	-11.26	-6.24**

**significant at the .01 level

Means and standard deviations are given in Table 190 for those CDD II students who took the algebra regents.

TABLE 190

ALGEBRA REGENTS - CDD II

Center	N	Mean	S.D.
I	15	59.73	6.83
II	51	65.61	20.49
III	40	51.60	19.20
IV	12	52.58	15.22
V	46	39.11	17.20
Total	164	53.27	20.80

The analysis of variance showed significant variability between Center means (Table 191). Table 192 shows Center II students to have performed significantly better on the algebra regents than those students in Centers III, IV and V, whereas students in Center V performed on the average lower than students in all other Centers.

TABLE 191

ALGEBRA REGENTS - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	17732.12	4	4433.03	13.24**
Error	53248.08	159	334.89	
Total	70980.20	163		

**significant at the .01 level

TABLE 192

DIFFERENCES BETWEEN CENTERS IN ALGEBRA REGENTS - CDD II

Center		II	I	IV	III	V
	Mean	65.61	59.73	52.58	51.60	39.11
II	65.61		5.88	13.03*	14.01**	26.50**
I	59.73			7.15	8.13	20.62**
IV	52.58				.98	13.47*
III	51.60					12.49**
V	39.11					

**significant at the .01 level
*significant at the .05 level

The comparison of the CDD II group to its Control group revealed no significant difference across all Centers (Table 193). Whereas the CDD students in Centers I and II performed higher on the average than the Control students, the reverse was seen in Center V.

TABLE 193

COMPARISON OF CDD II AND CONTROL II ON THE ALGEBRA REGENTS

Center	Mean		Diff. bet. Means	t
	CDD II	Control II		
I	59.73	50.17	9.56	2.37*
II	65.61	45.42	20.19	3.62**
IV	52.58	45.25	7.33	.63
V	39.11	59.33	-20.33	-3.71**
Total	53.81	52.09	1.72	.52

**significant at the .01 level
*significant at the .05 level

Attendance data for the fall semester for CDD II are found in Table 194. The analysis of variance yielded an F value significant at the .01 level, which indicated that the mean number of absences between Centers varied significantly (Table 195).

TABLE 194

FALL ABSENCES - CDD II

Center	N	Mean	S.D.
I	80	6.15	6.27
II	109	3.97	4.86
III	89	3.12	3.70
IV	89	5.03	4.34
V	95	6.22	7.05
Total	461	4.86	5.50

TABLE 195

FALL ABSENCES - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	647.23	4	161.81	5.54**
Error	13316.02	456	29.20	
Total	13963.25	460		

**significant at the .01 level

Table 196 shows that Center III had a lower mean number of absences than Centers I, IV and V, while Center II was lower than Centers I and V.

TABLE 196

DIFFERENCES BETWEEN CENTERS IN FALL ABSENCES - CDD II

Center		V	I	IV	II	III
	Mean	6.22	6.15	5.03	3.97	3.12
V	6.22		.07	1.19	2.25**	3.10**
I	6.15			1.12	2.18**	3.03**
IV	5.03				1.06	1.91**
II	3.97					.85
III	3.12					

**significant at the .01 level

The comparison of the CDD II group to the Control II group across all Centers revealed no significant differences (Table 197). Within Center II, the CDD II group had a lower mean number of absences than the Control group whereas within Center V, the CDD group had a significantly higher mean number of absences than the Control group for the fall semester.

TABLE 197

COMPARISON OF CDD II AND CONTROL II ON FALL ABSENCES

Center	Mean CDD II	Mean Control II	Diff. bet. Means	t
I	6.15	6.90	- .75	- .68
II	3.97	6.97	- 3.00	-3.27**
IV	5.03	6.01	- .98	-1.52
V	6.22	3.93	2.29	2.60**
Total	5.27	5.87	- .60	-1.41

**significant at the .01 level

For the spring, absence data are given in Table 198. The analysis of variance yielded a non-significant F value (Table 199), indicating no significant difference between the mean number of absences for all Centers.

TABLE 198

SPRING ABSENCES - CDD II

Center	N	Mean	S.D.
I	80	9.15	8.98
II	101	6.90	7.29
III	89	6.15	6.57
IV	89	6.89	4.93
V	95	9.05	9.11
Total	454	7.60	7.63

TABLE 199

SPRING ABSENCES - CDD II

ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	481.83	4	120.46	2.09
Error	25913.41	449	57.71	
Total	26395.24	453		

The comparison of the CDD II group and the Control II group across all Centers yielded no significant difference in the mean number of absences (Table 201). In both Centers II and IV, the CDD students were absent on the average less frequently than the Control students.

TABLE 200

COMPARISON OF CDD II AND CONTROL II ON TENTH GRADE SPRING ABSENCES

Center	Mean		Diff. bet. Means	t
	CDD II	Control II		
I	9.15	10.34	-1.19	- .07
II	6.90	10.16	-3.26	-3.32**
IV	6.89	8.46	-1.57	-2.29*
V	9.05	6.94	2.11	1.39

**significant at the .01 level
*significant at the .05 level

Data on the total year absences are presented in Table 201. The analysis of variance showed the mean number of absences between Centers to be significantly different (Table 202). Table 203 presents Center I as having obtained a higher mean number of absences than Centers II and III, while Center V was higher than Centers II, III and IV.

TABLE 201

TENTH YEAR TOTAL ABSENCES - CDD II

Center	N	Mean	S.D.
I	80	15.30	14.00
II	101	11.01	11.37
III	89	9.27	9.74
IV	89	11.92	8.44
V	95	15.27	14.72
Total	454	12.50	12.50

TABLE 202

TOTAL YEAR ABSENCES - CDD II
ANALYSIS OF VARIANCE BETWEEN CENTERS

Source	SS	df	MS	F
Center	2540.82	4	635.21	4.54**
Error	54110.67	449	142.78	
Total	66651.49	453		

**significant at the .01 level

TABLE 203

DIFFERENCES BETWEEN CENTERS IN
TOTAL YEAR ABSENCES - CDD II

Center		I	V	IV	II	III
	Mean	15.30	15.27	11.92	11.01	9.27
I	15.30		.03	3.38	4.29*	6.03**
V	15.27			3.35*	4.26*	6.00**
IV	11.92				.91	2.65
II	11.01					1.74
III	9.27					

**significant at the .01 level
*significant at the .05 level

There was no significant difference found between the mean number of absences for the CDD II group and the Control II group across all Centers (Table 204). In Centers II and IV, CDD students were on the average absent less often than the Control students, whereas in Center V, the reverse was true.

TABLE 204

COMPARISON OF CDD II AND CONTROL II
ON TENTH YEAR TOTAL ABSENCES

Center	Means		Diff. bet. Means	t
	CDD II	Control II		
I	15.30	17.74	-2.44	- .97
II	11.01	17.68	-6.67	-3.34**
IV	11.92	14.40	-2.48	-2.10*
V	15.27	10.70	4.57	2.45
Total	13.28	14.79	-1.51	- .16

**significant at the .01 level
*significant at the .05 level

When CDD II was compared to CDD I on the mean number of total year absences in the tenth year, the CDD I students were found to have been absent more frequently (Table 206). In Centers I, II and III, this trend was reflected whereas in Center V, CDD II students were absent on the average more often than CDD I students in the tenth grade.

TABLE 205

COMPARISON OF CDD I AND CDD II
ON TENTH YEAR TOTAL ABSENCES

Center	Means		Diff. bet. Means	t
	CDD I	CDD II		
I	19.22	15.30	3.92	2.06*
II	16.89	11.01	5.88	3.38**
III	20.33	9.27	11.06	5.35**
IV	10.27	11.92	-1.65	-1.25
V	11.66	15.27	-3.61	-1.99*
Total	16.07	12.50	3.57	4.25**

**significant at the .01 level
*significant at the .05 level

CHAPTER V

EFFECTS OF THE SUMMER PROGRAM

The eight-week summer program held on the Columbia University campus, known as Project Double Discovery and sponsored by Upward Bound, completed its second summer of operation by August of 1966. Students in CDD I who took part in this project for the first summer had the opportunity to return for a second summer, while 110 students in CDD II were selected for their first summer.

The following chapter will present the achievement and attendance of CDD I students in the eleventh year of high school who had spent two summers on the Columbia campus (Upward Bound) as compared to those CDD I students who had not spent any summers with the Upward Bound project (Non-Upward Bound).

CDD II Upward Bound students were compared to CDD II Non-Upward Bound students on achievement and attendance as well as aptitude. In order to ascertain whether or not CDD I and CDD II Upward Bound groups were comparable, comparisons were made on aptitude measures. Statistical comparisons were also made on achievement and attendance between the two Upward Bound groups in the tenth year of high school after the first summer with Project Double Discovery.

CDD I

Table 206 presents the means and standard deviations of the spring eleventh year average for CDD I Upward Bound students (UB I) after the second summer on the Columbia campus.

TABLE 206

SPRING AVERAGE - UB I
TWO SUMMERS

Center	N	Mean	S.D.
I	27	65.52	13.95
II	21	72.81	6.73
III	20	73.05	10.20
IV	15	70.60	9.32
V	14	72.14	7.76
Total	97	70.39	10.83

When the CDD I Upward Bound (UB I) was compared to the CDD I Non-Upward Bound group (N-UB I) across all Centers on mean spring average, no significant difference was found (Table 207). Yet within Center III, UB I achieved significantly better than N-UB I in the spring semester.

TABLE 207

COMPARISON OF UB I AND N-UB I
ON THE SPRING AVERAGE
TWO SUMMERS

Center	Mean		Diff. bet. Means	t
	UB I	N-UB I		
I	65.52	69.62	-4.10	-1.32
II	72.81	71.94	.87	.46
III	73.05	66.09	6.96	2.48*
IV	70.60	73.90	-3.30	-1.24
V	72.14	69.26	2.88	1.18
Total	70.39	70.00	.39	.31

*significant at the .05 level

The performance of UB I on the foreign language regents is given in Table 208. Since a breakdown into various languages taken would give very small numbers, performances on all languages were grouped together for each Center.

TABLE 208

FOREIGN LANGUAGE REGENTS - UB I
TWO SUMMERS

Center	N	Mean	S.D.
I	9	63.78	15.61
II	12	73.92	11.50
III	11	72.45	16.36
IV	11	75.00	7.76
V	14	66.00	15.48
Total	57	70.30	14.41

The comparison of UB I and N-UB I on mean performance on the foreign language regents across all Centers and within each Center yielded no significant differences (Table 209). CDD I students having two summer experiences with the Double Discovery project did not do any better than those students having no summer program experience.

TABLE 209

COMPARISON OF UB I AND N-UB I
ON THE FOREIGN LANGUAGE REGENTS
TWO SUMMERS

Center	Mean		Diff. bet. Means	t
	UB I	N-UB I		
I	63.78	74.52	-10.74	-1.83
II	73.92	76.87	- 2.95	- .74
III	72.45	68.46	3.99	.67
IV	75.00	73.10	1.90	.69
V	66.00	68.44	- 2.44	- .52
Total	70.30	71.93	- 1.63	- .75

For the regents for all math subjects, means and corresponding standard deviations are shown in Table 210 for UB I students in all Centers.

TABLE 210

MATH REGENTS - UB I
TWO SUMMERS

Center	N	Mean	S.D.
I	10	57.50	15.36
II	7	54.15	25.01
III	16	55.06	23.60
IV	10	61.20	14.03
V	12	59.92	15.57
Total	55	57.56	19.50

Again, comparison of UB I and N-UB I on mean math regents performance across all Centers indicated no significant difference (Table 211). This was reflected within all Centers.

TABLE 211

COMPARISON OF UB I AND N-UB I
ON MATH REGENTS
TWO SUMMERS

Center	Mean		Diff. bet. Means	t
	UB I	N-UB I		
I	57.50	59.74	-2.24	- .38
II	54.14	61.47	-7.33	- .69
III	55.06	55.76	- .70	- .09
IV	61.20	68.14	-6.94	-1.34
V	59.92	57.29	2.63	.45
Total	57.56	60.97	-3.41	-1.14

The data for UB I performance on the science regents are listed in Table 212. As for the language regents, all sciences were included in computation of the means for each Center.

TABLE 212

SCIENCE REGENTS - UB I
TWO SUMMERS

Center	N	Mean	S.D.
I	9	65.18	16.14
II	12	59.58	10.36
III	14	61.93	14.29
IV	14	64.50	11.92
V	14	65.64	8.89
Total	63	63.43	12.55

When the means on the science regents for UB I and N-UB I were compared across all Centers no significant difference was found (Table 213), as was the case for within Center comparisons.

TABLE 213

COMPARISON OF UB I AND N-UB I
ON ALL SCIENCE REGENTS
TWO SUMMERS

	Mean		Diff. bet.	
Center	UB I	N-UB I	Means	t
I	65.78	61.93	3.85	.58
II	59.58	64.80	-5.22	-1.40
III	61.93	65.53	-3.60	- .80
IV	64.50	65.90	-1.40	- .38
V	65.64	68.15	-2.51	- .88
Total	63.43	65.72	-2.29	-1.25

Table 214 indicates the means and standard deviations of number of Spring absences for all Centers for UB I students.

TABLE 214

SPRING ABSENCES - UB I
TWO SUMMERS

Center	N	Mean	S.D.
I	27	11.89	12.82
II	21	11.24	9.37
III	18	6.61	5.51
IV	14	6.14	5.08
V	14	4.64	4.55
Total	94	8.80	9.39

When UB I and N-UB I were compared across all Centers on mean number of Spring absences, no significant difference was revealed. Center IV did show UB I students to be absent on the average significantly less often than N-UB I students. For the other four Centers there were no significant differences between the two groups on absenteeism (Table 215).

TABLE 215

COMPARISON OF UB I AND N-UB I
ON SPRING ABSENCES
TWO SUMMERS

Center	Mean		Diff. bet. Means	t
	UB I	N-UB I		
I	11.89	10.12	1.77	.66
II	11.24	10.59	.65	.27
III	6.61	6.86	-1.25	- .15
IV	6.14	7.84	-1.70	-2.27*
V	4.64	6.86	-2.22	-1.51
Total	8.80	8.58	.22	.20

CDD II

In order to determine the nature of UB II students in terms of abilities, the scores of the subtests of the Differential Aptitude Tests and Stanford Achievement Test were examined. The means and standard deviations for the Verbal Reasoning subtest of the Differential Aptitude Tests for UB II are given in Table 216.

TABLE 216

DIFFERENTIAL APTITUDE TESTS

VERBAL REASONING SUBTEST - UB II

Center	N	Mean	S.D.
I	21	27.38	8.33
II	27	26.48	8.03
III	29	28.17	7.08
IV	33	28.88	7.34
V	15	24.07	8.01
Total	125	27.49	7.79

The comparison of the UB II group with the N-UB II group on the mean performance on the Verbal Reasoning subtest demonstrated a significant difference across all Centers. The UB II group performed higher on the average on the subtest than the N-UB II group (Table 217). This trend was reflected only in Center III.

TABLE 217

COMPARISON OF UB II AND N-UB II

ON VERBAL REASONING SUBTEST

Center	Mean		Diff. bet. Means	t
	UB II	N-UB II		
I	27.38	26.42	.96	.45
II	26.48	25.58	.90	.49
III	28.17	23.73	4.44	2.68**
IV	28.88	28.61	.27	.15
V	24.07	24.36	- .29	- .13
Total	27.49	25.62	1.87	2.10*

**significant at the .01 level
*significant at the .05 level

In order to see if the two populations, UB I and UB II, were the same in aptitude, their mean performances on the various measures were compared. On the Verbal Reasoning subtest, there were no significant differences in mean performance between the two groups across all Centers or within Centers (Table 218).

TABLE 218

COMPARISON OF UB I AND UB II ON THE VERBAL REASONING SUBTEST

Center	Mean		Diff. bet. Means	t
	UB I	UB II		
I	24.67	27.38	-2.71	-1.15
II	26.33	26.48	- .15	- .07
III	26.91	28.17	-1.26	- .69
IV	30.81	28.88	1.93	1.04
V	25.04	24.07	.97	.36
Total	26.63	27.49	- .86	- .89

Table 219 shows the means and corresponding standard deviations for the Numerical Ability subtest of the Differential Aptitude Tests for the UB II group. A comparison of mean performance on the subtest between UB II and N-UB II across all Centers showed no significant difference (Table 220). Within Centers I and V, the Upward Bound students scored significantly higher than Non-Upward Bound students.

TABLE 219

DIFFERENTIAL APTITUDE TESTS NUMERICAL ABILITY SUBTEST-UB II

Center	N	Mean	S.D.
I	21	20.24	4.73
II	27	19.04	6.16
III	29	17.86	3.75
IV	33	20.88	5.50
V	15	21.93	2.71
Total	125	19.62	5.59

TABLE 220

COMPARISON OF UB II AND N-UB II
ON THE NUMERICAL ABILITY SUBTEST

Center	Mean		Diff. bet. Means	t
	UB II	N-UB II		
I	20.24	17.10	3.14	2.24*
II	19.04	20.12	-1.08	- .79
III	17.86	19.03	-1.17	-1.14
IV	20.88	22.51	-1.63	-1.31
V	21.93	18.83	3.10	3.28**
Total	19.62	19.57	.05	.09

**significant at the .01 level
*significant at the .05 level

UB I and UB II students were noted to have comparable numerical ability when across Center and within Center comparisons of means were made (Table 221).

TABLE 221

COMPARISON OF UB I AND N-UB II
ON THE NUMERICAL ABILITY SUBTEST

Center	Mean		Diff. bet. Means	t
	UB I	UB II		
I	18.42	20.24	-1.82	-1.12
II	21.32	19.04	2.28	1.46
III	19.85	17.86	1.99	1.63
IV	23.42	20.88	2.54	1.70
V	21.42	21.93	- .51	- .39
Total	20.65	19.62	1.03	1.43

The data for the combined Verbal Reasoning and Numerical Ability subtests for UB II are presented in Table 222. When means of the combined scores were compared between UB II and N-UB II students across Centers, no significant difference was found (Table 223). Only within Center III was the UB II group found to have a significantly higher mean than the N-UB II group in the combined subtests.

TABLE 222

DIFFERENTIAL APTITUDE TESTS: VERBAL REASONING AND NUMERICAL ABILITY SUBTESTS

Center	N	Mean	S.D.
I	22	46.09	9.28
II	27	45.52	10.90
III	29	47.31	9.11
IV	33	49.79	9.07
V	15	45.53	12.31
Total	126	47.15	10.10

TABLE 223

COMPARISON OF UB II AND N-UB II

ON COMBINED VERBAL REASONING AND NUMERICAL ABILITY SUBTESTS

Center	Mean		Diff. bet. Means	t
	UB II	N-UB II		
I	46.09	43.64	2.45	.99
II	45.52	45.97	- .45	- .18
III	47.31	42.76	4.55	2.12*
IV	49.79	50.44	- .65	- .28
V	45.53	43.19	2.34	.67
Total	47.15	45.16	1.99	1.82

*significant at the .05 level

As for the individual subtests, the means of the combined scores on the Verbal Reasoning and Numerical Ability subtests were not significantly different for the UB I and UB II groups when across Center and within Center comparisons were made (Table 224).

TABLE 224

COMPARISON OF UB I AND UB II
ON COMBINED VERBAL REASONING AND NUMERICAL ABILITY SUBTESTS

Center	Mean		Diff. bet. Means	t
	UB I	UB II		
I	43.08	46.09	-3.01	-1.00
II	47.71	45.52	2.19	.74
III	46.76	47.31	- .55	- .23
IV	54.23	49.79	4.44	1.72
V	46.46	45.53	.93	.23
Total	47.28	47.15	.13	.10

Table 225 lists the means and standard deviations for the Differential Aptitude Tests: Abstract Reasoning subtest for the UB II group. A comparison of group means between UB II and N-UB II indicated no significant differences across all Centers and within Centers (Table 226).

TABLE 225

DIFFERENTIAL APTITUDE TESTS:
ABSTRACT REASONING SUBTEST - UB II

Center	N	Mean	S.D.
I	22	32.96	6.53
II	28	31.54	4.92
III	29	32.59	6.22
IV	33	34.15	5.42
V	15	32.40	6.36
Total	127	32.80	5.89

TABLE 226

COMPARISON OF UB II AND N-UB II
ON THE ABSTRACT REASONING SUBTEST

Center	Means UB II	Means N-UB II	Diff. bet. Means	t
I	32.96	33.14	- .18	- .10
II	31.54	32.99	-1.45	-1.14
III	32.59	33.29	- .70	- .49
IV	34.15	33.83	.32	.31
V	32.40	33.04	- .64	- .34
Total	32.80	33.33	- .53	- .79

When UB I was compared to UB II on mean performance on the Abstract Reasoning subtest, no significant difference was found across all Centers. Within Center IV, UB I obtained a significantly higher mean on the subtest than UB II (Table 227).

TABLE 227

COMPARISON OF UB I AND UB II
ON THE ABSTRACT REASONING SUBTEST

Center	Means UB I	Means UB II	Diff. bet. Means	t
I	33.56	32.96	.60	.29
II	32.68	31.54	1.14	.62
III	34.03	32.59	1.44	.93
IV	36.73	34.15	2.58	2.00 *
V	32.54	32.40	.14	1.07
Total	33.92	32.80	1.12	1.54

*significant at the .05 level

The performance of UB II on the English subtest of the Stanford Achievement Test is shown in Table 228. Table 229 indicates that no significant difference existed in mean performance on the subtest between the UB II group and N-UB II group.

TABLE 228

STANFORD ACHIEVEMENT TEST:
ENGLISH SUBTEST - UB II

Center	N	Mean	S.D.
I	22	52.41	9.46
II	27	48.48	8.97
III	29	55.17	9.55
IV	33	51.79	9.28
V	15	49.07	10.53
Total	126	51.64	9.77

TABLE 229

COMPARISON OF UB II AND N-UB II ON THE ENGLISH SUBTEST
OF THE STANFORD ACHIEVEMENT TEST

Center	Mean		Diff. bet. Means	t
	UB II	N-UB II		
I	52.41	49.52	2.49	.90
II	48.48	48.73	- .25	- .12
III	55.17	51.71	3.46	1.57
IV	51.79	54.38	-2.59	-1.26
V	49.07	46.69	2.38	.81
Total	51.64	50.01	1.63	1.53

Both UB I and UB II were found to have achieved more or less equally well in English when within Center and across Center comparisons of means were made (Table 230).

TABLE 230

COMPARISON OF UB I AND UB II ON THE ENGLISH SUBTEST
OF THE STANFORD ACHIEVEMENT TEST

Center	Means UB I	 N-UB II	Diff. bet. Means	t
I	52.25	52.41	- .16	- .04
II	51.85	48.48	3.37	1.11
III	50.19	55.17	-4.98	-1.89
IV	56.32	51.79	4.53	1.78
V	46.95	49.07	-2.12	- .59
Total	51.56	51.64	- .08	- .06

The performance of UB II on the Reading subtest of the Stanford Achievement Test is given in Table 231. A comparison of mean reading scores between UB II and N-UB II across all Centers indicates a significant difference in favor of the Upward Bound group. Within Centers no significant difference in reading achievement between the two groups was indicated (Table 232).

TABLE 231

STANFORD ACHIEVEMENT TEST:
READING SUBTEST - UB II

Center	N	Mean	S.D.
I	22	35.14	6.88
II	28	33.11	7.82
III	29	35.35	9.62
IV	33	34.61	7.19
V	15	30.60	6.71
Total	127	34.06	7.99

TABLE 232

COMPARISON OF UB II AND N-UB II ON THE READING SUBTEST OF THE STANFORD ACHIEVEMENT TEST

Center	Mean		Diff. bet. Means	t
	UB II	N-UB II		
I	35.14	33.67	1.47	.76
II	33.11	30.46	2.65	1.48
III	35.35	32.18	3.17	1.61
IV	34.61	37.12	-2.51	-1.51
V	30.60	29.54	1.06	.54
Total	34.06	32.24	1.82	2.16*

*significant at the .05 level

UB I and UB II achieved not significantly different from each other when means on the Reading subtest were compared within Centers and across Cetners (Table 233).

TABLE 233

COMPARISON OF UB I AND UB II ON THE READING SUBTEST OF THE STANFORD ACHIEVEMENT TEST

Center	Mean		Diff. bet. Means	t
	UB I	UB II		
I	30.55	35.14	-4.59	-1.40
II	32.45	33.11	- .66	- .29
III	34.13	35.35	-1.22	- .52
IV	36.70	34.61	2.09	1.01
V	31.50	30.60	.90	.38
Total	33.13	34.06	- .93	- .90

The fall average for UB II students ranged from 69.37 to 78.19 for all Centers (Table 234). A comparison of UB II fall performance to the academic performance of N-UB II students indicated no significant difference between means (Table 235).

TABLE 234

FALL GENERAL AVERAGE UB II

Center	N	Mean	S.D.
I	27	69.37	12.83
II	28	74.50	8.99
III	32	78.19	7.59
IV	29	70.14	6.75
V	15	71.67	8.51
Total	131	73.05	9.77

TABLE 235

COMPARISON OF UB II AND N-UB II
ON FALL GENERAL AVERAGE

Center	Mean		Diff. bet. Means	t
	UB II	N-UB II		
I	69.37	71.78	-2.41	- .78
II	74.50	75.81	-1.31	- .64
III	78.19	75.11	3.08	1.70
IV	70.14	72.16	-2.02	-1.37
V	71.67	68.58	3.09	1.25
Total	73.05	72.75	.30	.30

For the Spring average, means and standard deviations are shown in Table 236 Only in Center I was there a significant difference between mean general average in the Spring semester between the UB II group and N-UB II group. The Non-Upward Bound students performed on the average higher than those students having the summer experience (Table 237).

TABLE 236

SPRING GENERAL AVERAGE - UB II

Center	N	Mean	S.D.
I	26	63.31	13.76
II	29	70.97	11.02
III	33	71.06	9.36
IV	29	69.55	7.72
V	15	69.20	9.22
Total	132	68.97	10.81

TABLE 237

COMPARISON OF UB II AND N-UB II

ON SPRING GENERAL AVERAGE

Center	Mean		Diff. bet. Means	t
	UB II	N-UB II		
I	63.31	71.67	-8.36	-2.52*
II	70.97	74.57	-3.60	-1.54
III	71.06	69.94	1.12	.50
IV	69.55	72.57	-3.02	-1.70
V	69.20	67.17	2.03	.74
Total	68.97	71.13	-2.16	-1.93

*significant at the .05 level

UB I students obtained significantly higher spring averages in the tenth year than UB II students when an across Center comparison was made (Table 238). In Centers I and IV, the higher academic performance of UB I over UB II students in the spring semester was significant at the .05 level.

TABLE 238

COMPARISON OF UB I AND UB II
IN SPRING GENERAL AVERAGE

Center	Mean UB I	Mean UB II	Diff. bet. Means	t
I	70.92	63.31	7.61	2.52*
II	77.97	74.57	3.40	1.42
III	72.54	71.06	1.48	.54
IV	73.50	69.55	3.95	2.15*
V	74.02	69.20	4.82	1.43
Total	73.54	68.97	4.57	3.60**

**significant at the .01 level
*significant at the .05 level

Data on the foreign language regents for the UB II group are contained in Table 239. When compared to the N-UB II group, the UB II group did not perform on the average significantly different on the foreign language regents. This comparable performance was reflected within all four Centers (Table 240).

TABLE 239

FOREIGN LANGUAGE REGENTS - UB II

Center	N	Mean	S.D.
I	9	68.44	12.66
II	9	75.33	13.40
III	22	67.32	18.77
IV	19	74.95	13.06
V	4	71.50	5.93
Total	63	71.19	15.73

TABLE 240

COMPARISON OF UB II AND N-UB II
ON THE FOREIGN LANGUAGE REGENTS

Center	Means		Diff. bet. Means	t
	UB II	N-UB II		
I	68.44	70.75	-2.31	- .44
II	75.33	78.15	-2.82	- .48
III	67.32	74.00	-6.68	-1.38
IV	74.95	75.31	- .36	- .11
V	71.50	67.14	4.36	.96
Total	71.19	73.19	-2.00	- .65

Table 241 presents the means and standard deviations for UB II students in all Centers on the science regents. When a comparison was made across all Centers between UB II and N-UB II in mean performance on the science regents no significant difference was found (Table 242).

TABLE 241

SCIENCE REGENTS - UB II

Center	N	Mean	S.D.
I	13	71.31	10.56
II	26	69.35	11.02
III	32	68.88	7.13
IV	27	72.33	8.93
V	15	64.73	6.50
Total	113	69.54	9.23

TABLE 242

COMPARISON OF UB II AND N-UB II
ON THE SCIENCE REGENTS

Center	Mean		Diff. bet. Means	t
	UB II	N-UB II		
I	71.31	73.11	-1.80	- .50
II	69.35	67.68	1.67	1.69
III	68.82	69.12	- .30	- .13
IV	72.33	73.53	-1.20	- .59
V	64.73	64.79	- .06	- .02
Total	69.54	70.89	-1.35	-1.27

The performance of UB II in all Centers on both the algebra and geometry regents combined is presented in Table 243. The comparison of mean performance in the science regents between the UB II group and the N-UB II group indicated no significant difference across all Centers (Table 244). This comparability in performance was reflected in all Centers.

TABLE 243

MATH REGENTS - UB II

Center	N	Mean	S.D.
I	12	61.42	20.90
II	26	59.62	24.72
III	29	59.55	19.25
IV	26	58.35	16.60
V	13	46.46	17.67
Total	106	57.88	20.63

TABLE 244

COMPARISON OF UB II AND N-UB II
ON THE MATH REGENTS

Center	Mean UB II	Mean N-UB II	Diff. bet. Means	t
I	61.42	68.40	-6.98	- .46
II	59.62	69.36	-9.74	1.55
III	59.55	61.38	- .83	- .42
IV	58.35	66.38	-8.03	-2.00*
V	46.46	50.14	-3.68	- .64
Total	57.88	62.43	-4.55	-1.83

*significant at the .05 level

Attendance data for the total year for the UB II group are contained in Table 245. Only in Center IV did a significant difference exist between the UB II group and the N-UB II group on mean number of total absences for the school year (Table 246).

TABLE 245

TOTAL YEAR ABSENCES - UB II

Center	N	Mean	S.D.
I	26	17.08	11.99
II	26	12.62	11.15
III	30	8.93	7.95
IV	28	15.07	9.01
V	15	11.27	7.79
Total	125	13.05	10.25

TABLE 246

COMPARISON OF UB II AND N-UB II
ON TOTAL YEAR ABSENCES

Center	Means UB II	Means N-UB II	Diff. bet. Means	t
I	17.08	13.76	3.32	1.08
II	12.62	10.45	2.17	.83
III	8.93	9.44	- .51	- .25
IV	15.07	10.48	4.59	2.30*
V	11.27	16.03	-4.76	-1.75
Total	13.05	12.17	.88	.76

*significant at the .05 level

When compared to the average number of total year absences for UB I across all Centers, the mean rate of absenteeism for UB II is not significantly different (Table 247). Within Center III, UB II students were absent on the average significantly less than often than UB I students.

TABLE 247

COMPARISON OF UB I AND UB II
ON TOTAL YEAR ABSENCES

Center	Means UB I	Means UB II	Diff. bet. Means	t
I	19.09	17.08	2.01	.65
II	14.52	12.62	1.90	.58
III	21.09	8.93	12.16	3.58**
IV	10.25	15.07	-4.82	-1.78
V	11.17	11.27	- .10	- .04
Total	15.73	13.05	2.68	1.83

**significant at the .01 level

On the whole it can be seen that CDD students who had two summers experience with Project Double Discovery did not have a significantly better performance than those who had no such experience at all. UB II students who were initially comparable to N-UB II students in terms of academic potential did not show a better performance in spite of one summer experience on the Columbia campus.

CHAPTER VI

CURRICULUM

> It was recognized that the youngsters selected for this program were those whose academic potentials were unlikely to develop in the conventional high school milieu and in the conventional college preparatory program. Therefore, five High School Development Centers were established (one in each borough of New York City). [1]

These High School Development Centers were the loci of all curriculum experience of College Discovery and Development Centers. Their establishment and operation represent a consensus among this Program's planners that a number of realities would continue to exist during the duration of this project's implementation and, therefore, would strongly influence the project's curriculum. One of these realities negated the possibility of drastic changes of courses of study or sequences of subjects in the students' program and involved legal requirements. For example, the City University stated that it would waive the requirement that a graduate of this program must present New York State Regents examination scores. However, the Board of Education was not able to waive this requirement. The immediate consequence was the establishment of quite specific requirements for sequences and content of certain subjects.

For a College Discovery and Development student to be evaluated as successful in his high school studies he must in effect take a conventional academic program; he must prepare for these statewide Regents examinations since passing them continued to be required for the academic diploma.

Such strictures require that we consider curriculum in a somewhat broader way than the conventional view in which curriculum is seen as a series of courses each with its individual scope and sequence. From this conventional point of view, the high school subjects studied by the College Discovery and Development Program student are identical with those of all other academic students. Our students must therefore meet the same requirements and have the same freedom in choosing elective subjects.

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[1] Tanner, Daniel and Lachica, Genaro, Discovering and Developing the College Potential of Disadvantaged High School Youth: A Report of the First Year of a Longitudinal Study on The College Discovery and Development Program, Office of Research and Evaluation, City University of New York, January, 1967, p. 10.

The typical academic high school program of a student in New York City may be summarized as follows:

1. The intellectual content of each high school course is fairly specifically defined in official syllabi. The proportion of optional content varies from subject to subject.
2. Certain courses and sequences of courses are prescribed for all academic students (seven of sixteen "units", four in English and three in Social Studies; a unit is a year of work).
3. Slightly more than half of each student's courses may be electives. However, each of three elective disciplines must be studied sequentially, two of them for a minimum of two years and a third for three years. In addition, the student must also complete two years of miscellaneous electives (a minimum total of nine "units" of electives).
4. Unusually successful students may be able to elect additional subjects to a total of as many as three more units.

It was clear to the planners of CDD that the major generalizations, relationships, processes and skills of each high school subject would remain almost identical for College Discovery and other classes in each host high school. Within these fairly rigid courses and course allocations, however, there are opportunities in CDD classes to modify approaches, materials, methods and patterns of organization of teaching and learning processes. The possible variations of activities, groupings, materials, illustrative examples and applications which are the daily vehicles of instruction are, in most subjects, limited only by the knowledge, resourcefulness and material resources available to the faculty.

The attempt was made, therefore, to utilize the unique organizational arrangements and to capitalize on the potential for developing a special climate for learning as the entry route for improving learning. The organizational arrangements have been described in the first year's report.[2] In summary, they include provision of: a coordinator in each school; small classes; double periods in certain subjects; college students, paid as tutors; a staff of college curriculum consultants to the teachers; and a strongly augmented guidance staff.

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[2] Tanner, Daniel and Lachica, Genaro, Discovering and Developing the College Potential of Disadvantaged High School Youth: A Report of the First Year of a Longitudinal Study on the College Discovery and Development Program, Office of Research and Evaluation, City University of New York, January, 1967, p. 10-15.

A second goal sought through the establishment of the High School Development Centers was the development of a positive climate for learning in each "school within a school"; each High School Development Center embodied the above organizational modifications so that it might develop among the College Discovery students and staff an "esprit de corps" which would result in stronger motivation, help improve achievement, and strengthen students' expectations of their own college study. To foster these developments several other environmental manipulations begun in the previous year were continued through the second year of the Program's implementation. These include: a continued guarantee of admission to a college of City University to every student who successfully completes the program; provision of a weekly stipend of $5.00 for extra books, supplies and special trips; and arrangements for procurement of special instructional materials whenever faculty readiness for their use could be achieved.

The CDD Faculty in the High School Centers. The teachers of CDD students in this second year of the Program were all regularly licensed members of the staffs of the five host schools. Each was selected by the principal of the school; in practice, however, the principal usually accepted the recommendation for assignment made by the chairman of each department in his school. In effect the assignments of CDD teachers were made by approximately twenty-five individual chairmen. General criteria, approved in the planning of this project, were used in selecting additional faculty for this second year.

> Efforts were made to select teachers who desire to teach in a Center and who were adjudged by the principal of the host school as being generally competent for such an assignment.[3]

Staff Development Activities. A considerable number of efforts were made to improve the knowledge, attitudes and competence of the teaching staff for working with the disadvantaged population of the College Discovery and Development Program. In general, these efforts were of two sorts: one kind involved working with groups of supervisors, administrators and teachers to develop more uniform understanding of the students and the purposes and derivative procedures of the Program; a second kind of effort focused directly upon teaching and learning processes involved in CDD program classes and was conducted largely through individual conferences between college curriculum consultants and class teachers. In practice, sharp differentiation of these purposes was not maintained in specific activities for several reasons. First, teachers must constantly make action decisions involving materials, activities, processes and evaluations of student progress. Variant perceptions of purposes were expected to lead to unsystematic variations of such decisions. It was, therefore, important to deal with rationale whenever working with faculty to improve their action decisions.

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[3] Ibid. p. 10

Second, most of a teacher's working time is spent alone with his class. The degree to which his functioning is significantly effected is at least in part a function of his understanding of the reasons why a particular teaching suggestion is appropriate to his pupils and to the program within which they study. Third, part of the rationale of the Program continues to be the operation of a "school within a school".

General Meetings. Several general meetings of CDD staff were held during this second year. The first of them was a weekend conference held at Lake Minnewaska.

Lake Minnewaska Conference. It was agreed among College Discovery and Development central staff of the Board of Education and the City University that a weekend staff conference was advisable for many reasons. First, it was evident that there were broad variations of perceptions, attitudes and beliefs among staff concerning purposes, procedures, freedoms and limitations. Second, the program had a new Director, Field Coordinator and Research Assistants who were practically unknown to school staff. Third, a new class had been enrolled with a variety of consequent problems. Fourth, there were also a large number of new faculty members in the schools. Fifth, several problems which had been unresolved in the previous year continued to be evident and new problems had emerged.

A conference was therefore planned to begin on Friday evening and continue through Sunday afternoon; its major purposes were to develop closer consensus among staff with regard to goals of the program, to identify and seek solutions to problems perceived by the staff, and to provide face to face interaction among personnel of the five Centers, the school system, and the University. Two kinds of curriculum-related problems were attached to the Lake Minnewaska Conference.

The first of these problem types involved clarification of the Program's purposes, definition of the nature and extent of the freedoms and limitations of staff actions and decisions and the clarification of derivative procedures. Such clarification was seen as a fundamental necessity underlying efforts to increase the effectiveness of instruction. An example mentioned above may clarify this for the reader.

At the conference there was unanimous acceptance that the most important purpose of the Program was to increase the number of College Discovery and Development students who could be accepted into and successfully complete college study. However, at the beginning of this meeting, most teachers felt that practically no modifications in their teaching were possible because City University required Regents examination grades as criteria for admission; the teachers believed that this precluded any change in their materials or methods of instruction:

> There is so much you have to do every single period to cover the Regents requirements that you can't take time to play around trying different ways. You're shovelling coal every minute! [1]

Extensive discussion in this session involving the use of College Discovery and Development staff as resources in their individual fields of expertise, made it clear to the participants that: (a) The City University did not pose this requirement for CDD students, the Board of Education did; (b) regardless of the source of this requirement, it was true that CDD students must take and pass Regents examinations; (c) there were limited numbers of degrees of teacher freedom regarding this stipulation (the group could make any recommendations it wished but had no power to decide policy on this issue); (d) there was, however, a different and real issue within the decision making power of each teacher and department chairman to determine. This issue was the complex question of how and in what ways the Regents examination requirement limits freedom of teaching patterns. Extensive discussion of these matters weakened some of the barriers to consideration of change by eliminating some of the targets of resistance, or by making some resistant positions less attractive to their holders, and by providing focus on the actual blocks, their loci, and the direction and magnitude of their effects. This example has been dissected here because accomplishment of this kind of ground clearing and foundation construction was found to be a necessary preliminary to action on problems of the second sort.

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[1] A teacher's comments early in a work session of College Discovery and Development at Lake Minnewaska.

The second kind of problem involved the specifics of what may, can, and should be done in organizing College Discovery and Development classes, in planning their daily lessons, and in teaching CDD students. The meeting at Lake Minnewaska was planned to facilitate work on this kind of problem. The conference plan included two interrelated aspects: the first was a plan for the sequence and personnel composition of conference sessions; the second was the employment of a unique compressed survey-feedback technique throughout the conference.

Conference Schedule. Six sessions were planned as indicated in the schedule:

College Discovery and Development Program
Lake Minnewaska Conference

Title: CDD: Purposes, Progress and Problems

Friday Evening: General Session (all participants)

Welcome

Research Instrument

Keynote Address[1]

Saturday Morning: Workshops (A)

Seven workshops, organized by official position of participants.

Four teacher groups (heterogenous in school and subject)

One curriculum consultant group (as above)

One guidance worker group (as above)

One administrative group (as above)

Saturday Afternoon: Workshops (B)

Seven workshops each organized by academic discipline, each heterogenous as to status and institutional affiliation.

(One each in English, Social Studies, Mathematics, Foreign Language, Science, Guidance and Administration.)

Saturday Evening: Workshops (C)

Five groups, organized by CDD Center, each attended by all staff who work in or with each Center.

Sunday Morning: Workshops (D)

Eight special interest groups individually selected by participants from among ten proposed by participants.

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[1] See Appendix page , for text of this presentation.

Sunday Afternoon: short general session for administration of post-conference research instrument and for closure.

The rationale for this arrangement included two aspects. It was apparent in the first year of the Program that each Center has a unique culture which is in large part derivative from that of its host school. However, the individual Center climate also includes newly developed patterns grown within the Center itself. These Center cultures strongly affect the perceptions, degrees of freedom, direction and strength of action decisions of the faculty with regard to their teaching. (Studies of the climates of these High School Development Centers are in progress and will be reported separately.)

Because CDD teachers and supervisors usually work only within their own Centers' climates, they tend to see their roles and functions in terms of those climates. The Program was therefore structured to require participants to study "CDD Purposes, Progress and Problems" in groups which were not the normal working habitats of the personnel; instead, the groups were planned to require interaction between perceptions, beliefs and procedures from among the various Centers and the sponsoring cooperators, the Board of Education and the City University.

A second reason for the kinds of groups organized was to provide freedom of interaction in different workshops among those of the same status (teachers, supervisors, etc.), those who were specialists in the same disciplines (English, Science, etc.), and finally, those in the same institution. It will be noted that the plan for organizing the conference sessions provided two sets of groupings in which formal organizational patterns were broken. These groupings were expected to lead to relaxation of the limitations of customary roles upon the extent and nature of discussions as well as upon inter-Center exchanges; it was found that they did so effectively.

One grouping late in the conference was planned for the faculty of each of the five Centers. It had been expected by the conference planners that the within-status and within-discipline exchanges in the previous sessions would lead to new kinds of discussion among the five faculty groups. This too was found to have occurred, although the depth to which these faculty meetings explored varied considerably among the five groups.

The second aspect of this conference plan, its use of compressed survey feedback technique, has been reported separately. An abstract of this report is included in Chapter IX. The complete report will be available shortly.

The consequences of this conference for curriculum improvement in College Discovery and Development Program were complex. A number of specific suggestions for materials and methods of instruction were recorded. Administrative records show purchase and delivery of many of these materials to the Centers. Reports of consultants and observations during visits have shown a slowly accelerating use of recommended materials and methodologies. Equally meaningful, a number of subsequent events occurred which were clearly derivative from the conference proceedings. Thus a conference of the chairmen of the high school departments within which CDD teachers function was planned at Minnewaska and held shortly thereafter. In this meeting further agreement was reached concerning the role of curriculum consultants in the five Centers. The consultants, it was agreed, were to perform stimulating, advisory, and teacher educational functions. They were encouraged to suggest ways of meeting daily teaching problems, to provide new or alternate materials, methods, or strategies and to serve in all other possible ways as resource persons. The teachers, however, remained under the supervision and evaluation of their department chairmen. It was also agreed at this meeting that consultants and chairmen in each subject matter area could meet profitably to work with the specialized problems of their disciplines; several such smaller group meetings took place subsequently.

Work of the College Curriculum Consultants. Beyond these meetings held in this second year of the program, most of the work of the curriculum consultants were as follows: provided instructional materials; taught techniques; observed teachers; taught demonstration lessons; interpreted student learning behaviors and, provided personal support and professional stimulation. The numbers of such visits, their foci, the nature of the specific materials, and techniques or content in each were widely variant among the fifteen City University professors who were assigned to the College Discovery and Development Program.

Curriculum Improvement in Subject Matter Areas. In each of the curriculum areas of the high schools several kinds of efforts occurred during this second year of the College Discovery and Development Program.

English. Improvement activities for this year began with individual consultant visits to the five Centers. The insights gained by the English consultants into the problems, resources and solution possibilities in the five Centers were shared in conferences of the English consultants with the Program Director. As a result, in the Lake Minnewaska Conference, the English workshop focused on some of these insights. The Minnewaska English workshop activities led to establishment of a committee to begin a curriculum guide for CDD English composition, since there was concurrence among the conferees that reading was not a source of difficulty for the majority of CDD students but that composition skill improvement was a critical need.

This committee's proposal was the subject of a subsequent city meeting of English chairmen, teachers and consultants. In this meeting the specific proposal for a composition course submitted by the committee was rejected; however, three of the Centers rejected it in favor of approaches they had independently developed for their own use. A second phase of this meeting involved consideration of a plan to survey the composition skills of CDD students by a standard instrument.

The Picture Story Language Test constructed by Helmer R. Myklebust was adopted by this conference. All eleventh grade CDD students were therefore tested and the results analyzed. Separate reports on this investigation are currently being prepared; abstracts are included in this volume in Chapter IX. The findings make it clear that there are several identifiable components of composition needs among our students, that meeting these needs involves aspects of staff development, and that material and methodological modifications appropriate to meeting these needs can be developed and will be needed. This follow-up is in an early developmental stage at this writing. In addition, the English Curriculum Consultants are working with individual class teachers using the scored and analyzed test instrument papers to organize intra-class student groups whose numbers have complementary developmental and remedial needs, to plan group activities and to further evaluate student progress.

Social Studies improvement activities followed the general pattern described for English. In the early part of the 1966-67 school year College Curriculum Consultants visited the five Centers, discussed their findings in conference with the Director and fed their learnings into the Social Studies workshop at Lake Minnewaska. A subsequent general meeting of chairmen and consultants held in the City led to redefinition of the consultant role and further clarification of working relationships; although this was not a meeting solely of Social Studies personnel. The level of Social Studies improvement activities was reduced early in this second year by heavy turnover of consultant and teacher staff which resulted from several forces. College professors formerly assigned

assigned as CDD Curriculum Consultants were withdrawn for September, 1966, to meet emergent needs in their college departments. Although the replacements supplied were excellent people, well qualified and experienced, their effectiveness in the five Centers was hampered by their need for orientation and slow process of gaining acceptance of high school personnel through repeated inter-personal interactive testing. It was not until early Spring of 1967 that these relationships were firmly re-established. This new barrier also had roots in quite extensive changes of teaching personnel among the staffs of the five High School Development Centers which resulted from real needs in the host high schools. While there is no doubt in the minds of College Discovery and Development personnel that the administrators of the host high schools acted appropriately in meeting their school-wide personnel needs by changing some of the social studies staff, it is also clear that the removal of teachers experienced with College Discovery and Development students was, in the majority of cases, a serious blow to curriculum improvement efforts in the "school within a school."

Despite these negative factors limited progress was made during this school year. The use of materials recommended by consultants increased considerably. There was also a considerable increase in the use of periodicals supplied from College Discovery and Development budget and a somewhat reduced reliance upon the single textbook.

In one department a standard practice emerged. This consisted of a weekly meeting during a period for which all College Discovery and Development personnel were scheduled for an administrative assignment. Each week all College Discovery and Development teachers, their department chairmen, the CDD Coordinator, the Guidance Counselors, the College Consultants, and whenever available, the Program Director met together. The agenda always included a review of the week's teaching aims, of progress made, and of problems encountered. In addition, staff members shared their successes, providing an observable cross-pollination of well adapted techniques and materials and an effective joint problem-solving process. Another standard aspect of these weekly conferences was a series of case conferences concerning the problems of individual students. Since resource people (chairmen and consultant) and guidance counselor met each week with class teachers, and since in many cases last year's teacher of each student with problems was present, effective treatment plans for individual students usually resulted. Finally, each such meeting spent a small portion of its time on administrative activities;

immediate availability of instructional aids (films, tapes, publications, maps, charts, realia, etc), as judged appropriate or desirable by the group. This weekly conference is currently, in all ways except variation of instructors in class meetings, a well developed team teaching situation. Achievement, attendance, student and staff morale continue high in this Center's social studies program.

Mathematics. Curriculum improvement efforts during this second year had several components. The first of these consisted of the ongoing efforts of the high school chairmen. This was a valuable and continuous activity. Its nature varied from department to department, and to some degree within departments. These included: group orientation and meetings devoted to solving teaching problems for CDD classes; individual conferences of teacher and chairmen; the location and adaptation of instructional materials which were appropriate to unique CDD student needs for learning in the standard course content; sessions devoted to teacher sharing of successful practices; and trials of instructional materials or activities which were new to some teachers.

A second aspect of mathematics instructional improvement was concerned with organizational arrangements. In three of the High School Development Centers double-period classes were used for those students judged by the department chairmen and guidance counselors to need this support. However, other College Discovery and Development students, who were viewed as more competent, were organized in single-period classes. In almost all cases mathematics classes continued small in size with none reported as larger than twenty-one students and most classes between fifteen and twenty. The remediation or redevelopment of basic mathematical knowledge and skills of students required constant emphasis for most students.

A third aspect of this year's curriculum program was the use of tutors. Tutors were employed in all Centers to supplement class instruction. Although there were a number of situations reported in which tutors' knowledge and skill were seen by faculty members as too limited, the majority of students reported that their work with tutors was useful to them. In one Center tutors used programmed instructional materials obtained by CDD at the school's request. This was found successful and the practice was extended to serve more students.

The final aspect of mathematics curriculum improvement efforts involved the work of the College Curriculum Consultants. An obstacle toward the development of a more successful mathematics curriculum improvement program was a curtailed consultant staff. One mathematics professor was available to the

College Discovery and Development Program throughout the year; the assignment of a second mathematics consultant, half-time in the Fall of 1966, was reduced to one-fifth time to meet the Spring semester needs of his department. A third consultant left her work in mid-autumn on maternity leave; it was not possible to arrange for a suitable replacement. Staff shortage for consultant efforts was, therefore, a serious problem throughout the year.

A proposal made at Lake Minnewaska and developed through the remainder of the year called for a fused three-semester Algebra-Geometry course for CDD students. Tentative outlines for this course were developed; their expansion into a curriculum package was planned for the Summer of 1967; this plan was forced to postponement by personnel problems and by changes of commitments regarding facilities and organization of Fall 1967 classes.

It is clear that much remains to be done in this curriculum area in addition to the commendable in-school efforts of the staffs of the High School Development Centers and that the City University component of the Program ought to extend, in the next program year, its efforts toward this end.

Foreign Languages. Curriculum improvement efforts in foreign language instruction during the second year of the College Discovery and Development Program were similar to those described above in other subject matter areas in several ways. First, course content and sequences in College Discovery Program Classes were closely similar to those in all other classes in each host high school. However, a number of College Discovery classes were established as double-length periods when previous records of students indicated need and facilities and staff could be provided. Second, the major daily efforts to provide more successful learning of College Discovery students were those of class teachers working under the department chairman's supervision. Third, college students were used as tutors to individual high school students as well as to small groups of students in extra class sessions. Fourth, one college professor served as resource consultant to the high school teacher. This consultant's interactions with foreign language teachers led to a number of changes of teaching materials and methodology.

In several schools changes of textbooks resulted from the efforts of the curriculum consultant, with College Discovery and Development classes changing to more modern books whose organization and content were linguistically more sound than those previously used. In several cases the use of language laboratories was initiated or extended as a result of the consultant's provision of materials, or her encouragement and training of teachers. Several teachers for whom language laboratory facilities were not available began to use portable tape recorders in ways new to them and to their students. In a small number of cases use of disc recordings on portable record players was maintained after the consultant's demonstrations of their utility. Finally, the consultant provided each department with materials not previously available to them and provided teachers with training in their use.

The problems of curriculum improvement efforts in foreign language were similar to those in other curriculum areas. One of these problems was staff mobility; some teachers who had developed insights into the special needs of College Discovery and Development students and who had become more effective in instruction to overcome these needs became unavailable to the Program. They were replaced by teachers new to the Program; an immediate consequence was the necessity to begin a staff re-development Program all over again with each such change. A second limiting factor was the inability of the college language departments to release professors as consultants to the College Discovery and Development Program because of intra-collegiate staffing problems. This created an inordinately heavy load for the one language consultant; her effectiveness in meeting responsibility to five High School Development Centers enrolling over 1,000 students was necessarily limited by a half-time assignment which limited her to a maximum of one visit in two weeks to each school.

Science. Improvement of instruction in the science aspects of the College Discovery and Development Program resembled efforts in all other curriculum areas. The high school department chairmen continued their normal excellent efforts to produce maximum instructional effectiveness and college students were assigned as tutors where needed for individual CDD students and for small groups. Official policies of the New York City High Schools regarding science courses of study changed for the second year of the program; new courses of study were mandated in the high school sciences. These new courses closely paralleled or coincided with the recommendations and previous efforts of the College Discovery and Development science consultants in the host high schools. However, these new courses were not introduced because CDD consultants had urged them, but as a response of the school system to emerging developments in the discipline. That CDD consultants had been engaged in similar activities since the beginning of the CDD Program's planning was, thus, a demonstration of their professional competence.

A report of one of the science consultants which follows makes these relationships clear.

Curriculum Change in The College Discovery and Development Program. It is almost universally acclaimed by casual observers, by college professors, and by teachers in the system that it is virtually impossible to change schools.

With such an acclamation, a prophecy of staticism is made and all too often many individuals proceed to do everything possible to maintain the status quo. The prophecy of no-change is thus fulfilled.

Around the nation, in general, the late 1950's and the 1960's saw phenomenal curricular changes taking place in the several fields of science, and the slowness of change in New York City notwithstanding, many perceptible curricular innovations have emerged.

The establishment of the College Discovery and Development Program in the five selected high school Centers in 1965 represented a major stride toward the institution of significant curriculum changes in the science programs.

From the inception of the five "schools within schools" which serve CDD youngsters, three of the country's leading science educators stationed, incidentally, in the City University of New York, have served as science consultants for the Program. This group of consultants includes Dr. William F. Goins, Associate Professor of Science Education of Brooklyn College, Dr. Archie L. Lacey, Associate Professor of Science Education at Hunter College, and Dr. Harold Spielman, Professor of Science Education at Brooklyn College. While Professor Spielman found it necessary to drop his consultant role after the 1966-67 school year, Professors Goins and Lacey have remained connected with the Program since its inception in 1965.

Since many curricular changes in the several sciences were already on the verge of being made with the implementation of experimental programs in biology, chemistry and physics, the contributions of the College Consultants might not be immediately apparent. But when it is realized that there was only one science department from the five Centers in the experimental program in biology, the picture changes.

It seems beyond question that the most important contribution of the science consultant to any aspect of the CDD program is the therapeutic and supportive role he plays vis-a-vis the teachers who must remain on the "firing line" from day-to-day. That role has been an indispensable one. But several more contributions of a more concrete nature have been made.

One of the first contributions made by the consultants was to help the science teachers, caught up in a rigid set of guidelines and pseudo standards, to begin to interpret curriculum as experiences rather than a course of study outline. Emphasis was placed on meaningful affective and psychomotor aspects of the science program, in addition to the purely cognitive which has been traditionally over-emphasized. To enhance such changes, novel activities and interesting reading materials were recommended and often supplied by the consultants.

A second significant change, with strong curricular implications, was assisting the teachers to clarify their own objectives or their reasons for doing certain things for, with, or to their pupils. As the teachers examined their own goals, they often began providing more realistic experiences for their students.

Perhaps the most concrete of the consultants' contributions were:

1. providing supplementary curricular materials for the teachers and pupils,
2. providing enrichment materials for the pupils,
3. collecting data from all Centers and producing a science newsletter to serve as a medium of expression and communication of significant curricular changes among all Centers, and
4. writing the major science curricular experiences for the participants in the Double Discovery Program at Columbia University during the summer.

Since all three science consultants spent most of their time in the teacher training enterprise each was uniquely prepared to help science teachers at the respective centers to implement the new science programs which were mandated for adoption in all high schools of New York State in the fall of 1967. The new programs for biology, chemistry and physics represent major curriculum changes, most very much on the style of those changes which had been encouraged by the science consultants since the inception of the high school CDD Program.

These statements do not mean to imply that dramatic changes have taken place at all Centers, or that a condition approaching perfection has been achieved. They are made, however, to imply that the science consultants have made a significant difference in what has happened in the science classes which were organized specifically for the CDD youngsters.

Archie L. Lacey
Associate Professor
Science Education
Hunter College in the Bronx

Conclusion. Curriculum improvement efforts in the College Discovery and Development Program during this second year of implementation were primarily composed of material and method modifications within standard Board of Education subject matter syllabi. Although there were beginnings of modifications of course content and organization these remained embryonic in development during this year, except in science where changes previously urged by consultants became city-wide policy. Such beginnings were made, however, in social studies, mathematics, and English.

Attempts to improve the effectiveness of instruction offered by teachers were made consistently by our college curriculum consultants. The success of these efforts varied with teacher and consultant mobility. Experience in several schools made it clear that an organizational arrangement which fostered staff development was possible. This was the continuation of departmental schedules to include one shared non-teaching period for all College Discovery and Development teachers in the department. Such scheduling made a weekly departmental College Discovery and Development conference feasible and strongly facilitated program administration, planning of instruction, staff training and ongoing evaluation-revision activities. This arrangement provided a locus for very effective involvement of Guidance Counselors, School Coordinators and especially for the Curriculum Consultants.

It is therefore recommended that future programming practices should include such scheduling wherever possible. It is recommended that team planning be instituted in each department in this program on a regular basis as an assigned "administrative period" for each teacher, that teachers scheduled for College Discovery and Development classes have long range assignments without frequent rotation and that College Curriculum Consultants also be assigned on a long range basis.

Finally, it is urged that the 73 teaching positions allocated to CDD be used entirely within CDD.

CHAPTER VII

REPORT ON GUIDANCE SERVICES 1966 - 1967

During the second year of the operation of the College Discovery and Development Program the structure of the Project remained the same. Additional personnel continued to be provided by the Board of Education and college consultants continued to be made available by the City University.

The Program operated in the same five schools in which it started in 1965. The schools are:

Jamaica High School	Queens
Port Richmond High School	Staten Island
Seward Park High School	Manhattan
Theodore Roosevelt High School	Bronx
Thomas Jefferson High School	Brooklyn

There were two classes in the Program during the past year - a class of 579 admitted in September 1965 and a class of 540 admitted in September 1966. The ethnic distribution of the groups is as follows - 46 per cent Negroes, 22 per cent Puerto Ricans, 2 per cent Asians, 30 per cent Others. The first class is scheduled to graduate from High School in June 1968 and the second class in June 1969.

The overcrowding in many of the centers which was described in last year's report and the renovation which started in some schools a year ago continued during the past year. However, despite the problems resulting from these conditions the counselors reported that the students sensed that a great deal of help was available to them. In some of the centers, there was a considerable increase in the number of self-referrals. Furthermore, as a result of the small counselor-pupil ratio of 1 to 100 it was possible for every student to be interviewed at least twice a term and most of them were counseled several times a semester.

The class that was admitted in September 1966 was oriented to the offerings of the schools and the objectives of the College Discovery and Development Program. Throughout the year group meetings were scheduled for the students in both classes and also for their parents. In some schools parents' meetings were scheduled bi-monthly and reports indicated that these meetings were very successful in securing the cooperation of the parents. In one school that had many Spanish speaking parents a Puerto Rican teacher served as an interpreter at the meetings and helped greatly in winning over the parents to an understanding and appreciation of the Program.

Since the College Discovery and Development Program is a college preparatory project the students are placed in the academic course which focuses on English, Social Studies, Languages, Sciences and Mathematics. During the year thirty students who found this program too exacting and were not profiting from it were transferred to the General Course, which is more flexible in its efforts. These transferees have been permitted to remain in the Program and to receive the intensive guidance and other special services which the Program provides.

Group counseling sessions were arranged to enable the students in both classes to discuss personal and family problems. The effectiveness of these varied. Reports from most of the schools indicated that in these small group meetings the students felt free to unburden themselves and they were often bolstered in finding that their fellow students had similar problems and anxieties.

At the group guidance sessions the students learned about different kinds of colleges and their requirements for admission. They also learned about tests of the College Entrance Examination Board and how to apply for them. They found out about the factors that determine college admissions. Furthermore, they received information on the ways of financing a college education. They heard guest speakers from the colleges and also from graduates of their own schools who were in college. The students viewed pertinent films about various colleges and they visited local four-year and two-year campuses both in groups and individually.

Some of the young people took advantage of the help offered by two organizations - Aspira which aids Puerto Rican students with their plans and the National Scholarship Service and Fund for Negro students - which affords similar help to other pupils. Students from several schools heard speakers from these organizations and they attended meetings sponsored by them.

Attention was also given to the career plans of the students. To aid them in this area the Kuder Preference Record was administered and this often led to counseling sessions about their interests and future plans. They read books and pamphlets on the professions and business opportunities. They heard guest speakers in their own schools and many of them attended the career programs that were arranged by the Bureau of Educational and Vocational Guidance. Practically all the students in the Program went to the Career Fair sponsored by WCBS-TV in cooperation with the Board of Education in May 1967. This brought to their attention many new careers that had opened up as a result of technological changes.

The cultural trips that were arranged for the students took them to some of the two-year and four-year oolleges, art galleries, industrial plants, theaters, and the Lincoln Center for concerts and the ballet. One school has a Play of the Month Club which enables the young people to see plays of their choice and to discuss their reactions under the direction of the faculty adviser. Two of the high schools arranged extensive trips for the students. In one school the eleventh year class accompanied by four teachers spent a weekend in Washington, D.C., and visited many places of historic interest. The enthusiasm of the young people for the trip was summed up by one of them who said, "It was wonderful to have history come alive and to see many of the famous places we had been studying about." Another school planned two eight-hour field trips on consecutive Saturdays to the Watchung Mountains in New Jersey. Each trip included a four-mile hike under the direction of a biology teacher. The students learned mountain climbing techniques and examined fossils and relics dating from colonial times.

At the end of the second year the Program showed certain strengths. Attendance was better for the College Discovery students than for other academic students in the same high school. The drop-out ratio was under 15 per cent which is not excessive considering the long distance many of the students have to travel. During the year some of them left to attend schools nearer their homes, a few moved out of the State, a few withdrew because of illness and some dropped out because of their poor academic records and their desire to obtain jobs.

The academic achievement of the students varied from Center to Center. A study of the marks for the two classes disclosed that 74 per cent of the tenth year group and 70 per cent of the eleventh year had passed all their subjects. There were a few with high averages. Seventeen per cent of the tenth year and 25 per cent of the eleventh year had averages of 80 per cent or over. Considering the poor prognosis for these students when they entered the Program they have made considerable academic progress. On the basis of the achievements of many of them it is hoped that, when they graduate, they will be equipped to enter college, either the four-year or two-year program.

During the year many of the students revealed growth and progress in many directions. Some of them became active in the student government organization and a few of them were elected to office. Several of the young people, as they gained in poise and confidence, went to their former schools and talked about the College Discovery and Development Program at assemblies. Some talked to parents' meetings in their own schools about the aims of the Program and their experiences in it. Several of them participated in radio programs and spoke with appreciation of what the project had meant to them. In one school students of Italian, Negro and Polish extraction became active with the Panel of Americans and through their speaking efforts in their own school and at outside meetings created good will for their ethnic groups.

In several of the schools the College Discovery students published their poetry, essays and book reviews in brochures that were attractively illustrated. Some of the writing, which vividly reflected their home and school experiences and also their aspirations, was very appealing.

In one school ten young people working under the direction of an English teacher had the satisfaction of having a play, "To Be a Man," which they had written and produced, purchased and published by Scholastic Magazine. It appears in the May 1967 issue of Scholastic Scope, a magazine for high school students.

In all the schools there was an increase in the use of paperback books which were eagerly read by the students. In one school all the eleventh year pupils received copies of The New York Times daily and circulating subscriptions to Harpers Magazine and The Saturday Review.

A number of young people in the schools received distinctions of various kinds. One obtained a scholarship for summer study at Phillips Academy in Andover, Massachusetts. Another was admitted to the Yale Summer School. One student received a partial scholarship in Marine Biology at a nationally sponsored summer institute at San Diego State College in California. Financial help from relatives enabled him to take advantage of this opportunity. One young man was admitted to a national science sponsored summer institute in Computer Programming at Manhattan College. Another was accepted for an advanced Mathematics Program at Hunter College and reported there on consecutive Saturdays throughout the year.

There were other indications of growth on the part of many of the young people which are, perhaps, not as spectacular as those mentioned above but were very satisfying to the young people themselves and to their parents, teachers and counselors. These evidences of progress are all the more praiseworthy because when many of these students entered the program their future did not look very promising. Thus, teachers interviewed about the College Discovery and Development Program reported that, while CDD classes were not very different from other high school classes academically, the CDD students were very much more "alive."

One of the gratifying outcomes of the program during the past year, was the professional growth of the counselors assigned to the Development Centers. This was due to many factors--the support that was furnished by the Bureau of Educational and Vocational Guidance, the help that came from the Coordinator of College Guidance and Scholarships, the assistance furnished by two of the college consultants in guidance and the regular monthly meetings of the administrative and guidance personnel arranged by the Project Coordinator.

The Bureau of Educational and Vocational Guidance made available to the program the Assistant Director of Guidance assigned to the High Schools and five Supervisors of Guidance. The Assistant Director of Guidance participated in the monthly conferences and kept in touch with the supervisors of guidance who visited the high schools and offered valuable suggestions. In-service training on group counseling was made possible by the Bureau of Educational and Vocational Guidance. The training was provided by a specialist from the Bureau who is also a practitioner.

One of the college consultants in guidance, who is a specialist in group dynamics, helped with the group counseling in two of the schools. She also addressed the counselors at one of their meetings on "The Nature of Disadvantaged Students" and spoke about the same topic to the faculty in one of the high schools. Another college consultant in guidance talked to the counselors at two of their monthly meetings on the "Dynamics of Individual Counseling" and used taped recordings to illustrate his talk.

The Coordinator of College Guidance and Scholarships kept the counselors informed about trends in college admissions and new developments in this area. He was an active participant at the monthly guidance meetings of CDD. The monthly conferences of the administrative and guidance personnel were very helpful to the counselors, enabling them to share mutual problems, to exchange views, and to obtain current literature and bibliographies pertinent to their duties.

At the end of the year there was evidence on the part of the counselors of real growth in understanding the needs of the students and an appreciation of the progress many of them were making. This was apparent from the revealing reports the counselors wrote concerning the Program, their extensive knowledge about the students and their families, and the splendid esprit de corps that had developed among the counselors from all the schools as well as the coordinators and teachers.

Florence C. Myers
Project Coordinator
Board of Education

CHAPTER VIII

COLLEGE CONSULTANTS 1966-1967

The City University, as part of its commitment to the College Discovery and Development Program, provides the equivalent of six full-time positions, divided among faculty members in the four senior colleges. They represent the following disciplines: English, foreign languages, guidance, mathematics, science, and social studies. Three college consultants have been with the program since the planning days; some have had to drop out because of leave of absence from college or program exigencies, and others have been added.

In the academic year 1966-1967 the following professors served as college consultants:

English:	Ruth Adams - City College Abraham Bernstein - Brooklyn College Florence Freedman - Hunter College (On leave fall semester, 1966.)
Foreign Languages:	Dora Bashour - Hunter College
Guidance:	Jean Gilbert - Brooklyn College Michael Guerriero - City College (second semester) Robert Sherman - Queens College (first semester)
Mathematics:	Linda Allegri - Hunter College Ann Peskin - City College (On leave, spring semester.) Hyman Gabai - City College (spring semester)
Science:	Archie Lacey - Hunter College William F. Goins, Jr. - Brooklyn College Harold S. Spielman - City College
Social Studies:	Martin Feldman - Queens College (second semester) Philip Freedman - Hunter College

The consultants' activities, while following general guidelines set in the planning sessions and further delineated in meetings with each other and with the directors of the program, were determined by the needs and wishes of chairmen and teachers within the subject area and their own perception of how they could best contribute to the College Discovery Program.

Some activities were common to all college consultants; others were special because of the nature of the subject taught and the particular contribution which the consultant could make.

Among the activities of all the consultants were the following:

1. Visits to the Development Centers. (The frequency of visits depended upon the number of consultants available in each subject area and the amount of program time allowed to them. It should be noted that the time given to the project in many cases far exceeded the program allowance.)

2. Conferences with teachers and chairmen, usually singly, but when possible in groups.

3. Conferences of consultants within a discipline, especially in preparation for group meetings and the annual conference, this year held at Lake Minnewaska.

4. Attendance at the Lake Minnewaska conference and participation in workshops there.

5. Discussing with teachers relevant materials, sometimes unknown to them, and arranging for the purchase of such materials with CDD funds.

6. Giving demonstration lessons (upon request of teachers).

7. Serving as liaison between Centers by means of informal reporting as well as by circulating questionnaires and their results. These questionnaires, though different from each other, sought to learn teachers' reactions to the program as well as what they had found to be successful materials or practices.

8. Work with tutors (especially in foreign languages and math).

English. In addition to the activities listed above, the following were undertaken by college consultants in English: Professor Bernstein gave, upon request, several demonstration lessons at one of the Centers. Professor Freedman participated, with Dr. Brody, Miss Myers, three students, and Miss Joy Fisher of the Board of Education, in a presentation of the CDD Program broadcast over WHN on March 19, 1967.

Although the consultants in English were not able to meet with chairmen and CDD teachers in groups at the Centers because of teachers' programs, they were able to arrange for a special meeting at the City University headquarters for chairmen and consultants on February 10, 1967 and a general meeting of chairmen, English teachers, and consultants on April 8, 1967. Dr. Brody participated in both meetings as well as in one of the planning sessions of the three consultants.

The purpose of these meetings was to plan ways of improving the composition work of CDD students, since the teachers had reported less success and greater need for improvement here than in the study of literature.

The college consultants held several planning meetings and prepared materials to be distributed or presented at the April 8th Conference. Professor Ruth Adams presented a resume of the Myklebust Picture Story Language Test. This test measures three aspects of written language by means of a picture about which students write. The written sample of each individual is judged on the basis of established norms in terms of (1) facility with language for productivity (2) correctness of language and (3) content of meaning. It was suggested that this test be used as a means of assessing the composition skills of all CDD tenth graders.

Professor Bernstein prepared a memorandum on a composition improvement program for CDD which was sent to participants in advance of the meeting as a basis for discussion. Professor Freedman prepared a resume of studies of problems of oral and written English, and distributed pertinent quotations from the monograph, Problems in Oral English, Kindergarten-Through Grade 9 edited by Walter Loban. Copies of this and Roger W. Shuy's Social Dialect and Language Learning were distributed to each chairman.

Two proposals resulted from the discussion at the April 8th meeting:

> That Professor Adams administer the Myklebust test to all tenth graders, and report the results next term, and that teachers be invited to submit to the consultants plans for lessons and units which they had found particularly successful with CDD students. Two Centers expressed interest in continued work on special courses or study related to the relationship of oral to written language and to structural linguistics for CDD students.
>
> In the spring term Professor Adams, with the assistance of Professor Freedman, administered the Myklebust test to all CDD tenth graders in the five Centers. In preparation Professor Adams conferred with Dr. Myklebust at Northwestern University. Dr. Adams scored the tests with help from research assistants at CDD and will return the papers and the results to the teachers in the fall. The statistical study

of the results will be done by Dr. Adams with the help of Dr. Brody and the research staff at CDD headquarters. A paper on the content of the work of the students, entitled "The Themes They Choose: 'Disadvantaged' Students Take A Composition Test" was written by Professors Adams and Freedman during the summer and submitted for publication.

Foreign Languages. In addition to usual visits to schools and conferences with CDD teachers of foreign languages, Professor Bashour offered teachers the opportunity to attend a conference and visit a school district near Syracuse in the spring of 1966 to observe a model program in teaching foreign languages using the audio-lingual-visual method. Three teachers were able to avail themselves of this opportunity and began to institute some of these methods in their classes in the fall of 1967. Despite the difficulty in obtaining the use of some of the equipment, (which, although present in the school, is not readily available because teachers do not hold their classes in the same room throughout the day) one teacher was able to have the daily use of the tape recorder, and several began to use the overhead projector.

Professor Bashour also acquainted Spanish teachers with a set of 400 pictures arranged in pairs to show contrastive structures in Spanish - a method applying the principles of linguistics. After adoption in one school at the end of last year, these materials were provided for CDD classes in all five schools this fall.

Realizing that the foreign language tutors had various levels of preparation in the study of language and needed help in learning techniques which would utilize their time most effectively, Professor Bashour arranged a meeting for foreign language tutors in all five Centers. (39 of 51 attended.) Professor Bashour presented a questionnaire to investigate the competence of the tutors in the foreign language they are tutoring; the results of this questionnaire may help in the recruitment and assignment of tutors in the future. To the tutors she presented foreign language drill techniques deemed effective in the tutorial situation and made suggestions to help improve tutor-pupil relationships.

Guidance. The work of the college consultants in guidance will be part of the report on guidance by Miss Florence Myers.

Mathematics. In addition to visits and conferences, Professor Peskin distributed a questionnaire, the results of which will be compiled. Professor Gabai acquainted teachers with and supplied S R A materials which they found helpful. Professor Allegri worked with college tutors because she found that most of the tutors from the senior colleges, although well prepared in mathematics, were simply doing the students' homework for them, instead of teaching them. The consultant, by working individually with the tutor and his students, showed the tutors how questioning could be used to clarify the work so that the students could do it on their own.

Professor Allegri worked also with the chairman of the Department of Mathematics of Port Richmond High School, Mr. Isaac Feinberg, in outlining a three-term course of study integrating the teaching of ninth grade mathematics (algebra) with that of the tenth grade (geometry) in an effort to solve the problem faced by some CDD students in mathematics. It has been found that the ninth grade curriculum in algebra has been a stumbling block for other academic students as well as for those in CDD. This has been recognized by the Board of Education, which is at present experimenting with a first year algebra curriculum which calls for an extension of the course from two terms to three.

Professor Allegri and Mr. Feinberg used another approach to the solution of this problem:

In the three-term course outlined by Professor Allegri and Mr. Feinberg, algebra as taught in the ninth grade and geometry as taught in tenth grade will be presented as a unified subject with algebra developed through a postulational approach that is reinforced in geometry. This should be especially valuable for those CDD students who begin the study of geometry with poor background in elementary school mathematics, with a failure in algebra, or with credit for general mathematics instead of algebra.

It was hoped that this course could be developed during the summer and initiated as an experiment in Port Richmond High School in the fall. Programming difficulties and the requirement that algebra Regents examinations be taken at the end of the tenth grade prevented the introduction of this course in the fall of 1967. It is hoped, however, that it will be possible to introduce such a course in the future. If this can be developed it will be a contribution to adaptation of the curriculum for the disadvantaged student with academic potential.

Science. The science consultants were particularly effective in acquainting teachers with new materials and in acquiring and distributing them to the teachers. In one Center in which the New York State experimental curriculum in biology was being used teachers used as a text one of three produced by the Biological Sciences Curriculum Study. Dr. Archie Lacey, the consultant who visited that school, acquainted them with other materials from BSCS, including texts using a different approach from theirs. (The three approaches are genetic-developmental, which the Center was using, physiological-biochemical, and evolutionary-developmental.) Tests and materials used in the other two approaches, distributed by the college consultants, provided enrichment.

In this Center the chairman arranged for all CDD science teachers to meet with the consultants - a valuable experience whenever it can be programmed.

Dr. Lacey also provided sets of BSCS materials for all five Centers, and recommended that they buy the transparencies and rent the motion pictures produced and recommended by the BSCS.

In addition to BSCS materials, Dr. Lacey provided Scientific American Readers (compilations of significant articles from this periodical, which are relevant to present problems.)

At the Lake Minnewaska conference, Professor Lacey served as chairman of the group meeting of science chairmen, teachers, and consultants.

In one of the Centers a worthwhile accomplishment resulting from the joint efforts of the chairman, teachers, and Dr. Goins, the college consultant, was the establishment of a double-period biology class during the second semester for those pupils who seemed to need the extra time, and the shifting from a single-period to double-period session in chemistry (and vice-versa) of those students who seemed to need more time or who could do with less time in that course.

The science consultants also distributed a questionnaire to learn teachers' reactions to the program and their successful teaching practices. The responses were compiled and the results were made available in a Science Newsletter, edited by Dr. Lacey, of which two were issued in 1966 - 1967.

It is interesting to note that the only entrant in the Westinghouse Science Talent Search in one of the Centers was a CDD student.

Social Studies. In addition to visiting classes and meeting with chairmen and teachers individually, as did other consultants, Professor Phillip Freedman met with CDD teachers in one school through a program arranged by the chairman. An outgrowth of these meetings was a plan to develop a special curriculum in World History designed for the CDD student and others like him. If extra time can be provided next year the group will work to develop this curriculum. (In most schools, however, it was possible only to confer with chairmen and teachers individually.)

Professor Martin Feldman was able to arrange with the student-teaching office at his college to place as many student teachers as possible in all subjects at one of the Centers. Dr. Feldman could therefore, in addition to his work with CDD, be in school to supervise four student teachers, thus enabling him to concentrate more of his time at the school.

RECOMMENDATIONS

College consultants made the following recommendations for the improvement of their function in the CDD program:

1. Arranging teachers' programs so that teachers in a subject area in each Center have free time in which to meet with each other and with the chairman and consultant.
2. Re-examination of the policy of having students take Regents examinations, as in some subjects this hampers curriculum innovation and experimentation.
3. Allotting extra time to CDD teachers for conferences and for working on adaptation or innovation of curriculum.
4. Continuation of double periods whenever possible.
5. Allowing students choice in subjects (such as chemistry, physics, or earth science) instead of programming all CDD students for the same science in the eleventh year.
6. Making enough college consultant time available in each area so that all five Centers can be served properly.

VALUE OF CONSULTANTS' PARTICIPATION

In addition to the good effects of the varied activities described above, the participation of college consultants in the CDD program has reaffirmed the idea that college professors and public school teachers (and by extension, the City University and the Board of Education) can understand and appreciate each other's aims and problems; that they can work cooperatively, constructively and effectively for the improvement of teaching and learning; that together they can arrive at new insights and provide new materials and methods for coping with the serious problem of deprivation of poverty-stricken youth with college potential.

Florence B. Freedman
Hunter College
City University of New York

CHAPTER IX

SUMMARIES OF ADJUNCT STUDIES

During the year a number of investigations were undertaken by members of CDD staff and have been completed or are presently in progress.

The studies run the spectrum of content. Topics explored were: the influence of peer groups on adolescents' attitudes, students' perceptions of their high school environment, socio-economic variables as predictors of achievement, the thematic content of students' compositions, and the tutoring aspect of the College Discovery and Development Program. Also studied was the value of survey-feedback as a technique to increase the likelihood of effective problem solving within a conference situation.

The abstracts in the following pages summarize the aforementioned projects.

NATURAL REFERENCE GROUPS*

A research project was begun in the Spring of 1966 which had as its purpose the investigation of parts of the psychological fields of adolescents. Dr. Muzafer and Carolyn Sherif, whose interests are in this area, have been consultants to the project. The research has been of two sorts: observation of natural reference groups, and administration of Self-Radius Goals Inventories.

Observation of Natural Reference Groups: In this phase of the research, college students established contact and then rapport with natural groups of high school students. Once they were accepted by the group members they were able to be around when members were engaging in various activities. This procedure may be distinguished from participant observation, where members know they are being studied.

Once observers established sufficient rapport they were able to report on various items of interest. For example, status within the group was rated by observers, using the criterion of effective initiative. Ratings were then checked for reliability through the use of an independent observer. Other data involve the administration of sociometric questions to individual group members regarding status and liking for one another, the effect of the group on attitudes held by individual members, and case histories of both the group and individual members. In addition, it is possible to do experimental hypothesis testing. We have recently completed a study where group status was found to be related to guessed performance on a task posed by the observer.

Presently we have almost completed the study cycle for one group of boys in the College Discovery and Development Program. Observation of this group has been performed at the high school which they attend, at the Double Discovery Program at Columbia University, and in their neighborhood.

Status rankings were attained by two other observers, but they have not yet progressed beyond this point.

It should be noted that research of this type is very difficult. Approximately 16 different observers have been used, and only a few have progressed to the point of establishing good rapport.

Self-Radius Goals Questionnaire: Self-Radius Goals Inventories were administered to 10th grade classes at the 5 College Discovery and Development Centers in the

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*Carl R. Steinhoff in collaboration with Carolyn and Muzafer Sherif.

Springs of 1966 and 1967. Among the areas covered in the questionnaire are time spent in various activities, money habits, ambitions in terms of occupation and money, factors considered important to success in life, courses liked and disliked in school, and attitude toward school and desegregation. Virtually all College Discovery and Development students responded (including those under more extensive field study, as described above), as well as several hundred control students. Approximately 730 questionnaires were collected in the first administration, and 597 in the second.

A report of results obtained from our investigation will be forthcoming in a monograph by Staff of the College Discovery and Development Program and the Sherifs.

STUDIES OF HIGH SCHOOL CLIMATE*

One of the major research objectives of the College Discovery and Development Program is a long term assessment of the climate or environmental press perceived by CDD and Control students in the five High School Development Centers. Only the most tentative findings may at present be reported. A detailed report will be available during the Fall of 1968.

A major program objective of the College Discovery and Development Program was the creation of a "school within a school" at each of the five High School Development Centers. Utilizing the _Stern High School Characteristics Index_, Steinhoff has indicated that in general College Discovery students perceive a higher level of anabolic press i.e. environmental characteristics which promote self-actualization, than do their host school control counterparts.

These, of course, are only preliminary findings. A reassessment of the perceptions of school climate of Class I will be undertaken in the Spring semester of 1968. In addition, an attempt will be made to relate the within-school perception of school climate to performance on standard achievement tests, utilizing covariance techniques to adjust for individual differences in achievement potential.

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*Carl R. Steinhoff, Presented at a Symposium held by the Educational Research Association of New York State, Albany, November 14, 1967.

SOCIOECONOMIC VARIABLES AS PREDICTORS OF ACHIEVEMENT WITHIN DIFFERENT LEVELS OF ABILITY, FOR MALE AND FEMALE HIGH SCHOOL STUDENTS IDENTIFIED AS DISADVANTAGED*

The need to consider predictors of achievement other than the intellective factors has been pointed out, since many who indicate high aptitude do not perform well. The purpose of this study was to examine the relationship between socio-economic variables and achievement for males and females separately within different levels of ability. More specifically:

1. What socioeconomic variables are significantly related to academic achievement for males and females within different levels of scholastic aptitude?
2. What socioeconomic variables contribute significantly to the multiple correlation coefficient for predicting academic performance for males and females within different levels of scholastic aptitude?
3. Is the multiple correlation coefficient significant in the prediction of academic performance by socioeconomic variables for males and females within different levels of scholastic aptitude?

The predictor variables studied were weekly income, parents-living together or not, overcrowding, and number of siblings. The measure of overcrowding was obtained by dividing the number of individuals in the household by the number of rooms in the house or apartment.

The criterion variable was the final average computed for the tenth year Spring semester. The control variable, scholastic aptitude, was measured by the combined scores of the subtests Verbal Reasoning and Numerical Ability of the Differential Aptitude tests.

The College Discovery population in one of the five Development Centers was chosen for study.

The 87 subjects sampled consisted of 42 males and 45 females. The males and females were divided into 3 groups each, of high, medium, and low ability as indicated by the combined Verbal Reasoning and Numerical Ability raw scores.

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*Beatrice Harris, abstract of a paper presented at a Symposium held by the Educational Research Association of New York State, Albany, November 14, 1967.

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The range of percentile ranks for each group are indicated below:

1.	High ability males	75 - 97th percentile
2.	Medium ability males	55 - 70th percentile
3.	Low ability males	20 - 50th percentile
4.	High ability females	65 - 85th percentile
5.	Medium ability females	50 - 65th percentile
6.	Low ability females	20 - 45th percentile

Although the Center chosen was located in a "middle-class" neighborhood, the College Discovery enrollment consisted of 76.1 per cent non-white students.

An intercorrelation matrix was generated for each group. The zero-order correlations between the socio-economic variables and criterion were examined to determine their individual value as predictors of school achievement. A multiple regression equation was also computed for each group.

For males of both high and low aptitude there were no significant zero-order r's. For males of medium aptitude, the number of siblings and degree of overcrowding correlated significantly with the final average. (Overcrowding $r = .58$, significant at .05 level; number of siblings, $r = .69$, significant at .01 level.)

For females of high and low aptitude there were no significant r's between socio-economic variables and achievement. For females of medium aptitude, significant zero-order correlations were obtained between the degree of overcrowding and number of siblings and the criterion variable. (Overcrowding $r = .45$, significant at .05 level; number of siblings $r = .44$, significant at .05 level.)

No one variable contributed consistently to the multiple R. In fact, for males of high ability and low ability and for females of high and low ability only one variable contributed to the multiple R - which is to say that no combination of socio-economic variables contributed anymore to prediction than the highest zero-order correlation - which were non-significant.

For males of medium ability, both the number of siblings and degree of overcrowding contributed to the multiple R. These two variables accounted for prediction of 52.3 per cent of the variance of the criterion variable, final average.

For females of medium ability, 42.7 per cent of the variance of the final average was predicted by the known variance of the four predictor variables.

The multiple R was significantly different from zero only for males of medium ability (R = .72, significant at .01 level).

In sum, the correlations indicated that for males of medium ability, an increase in the number of siblings and overcrowding would be associated with an increase in academic performance. For females of medium ability, an increase in the number of siblings and overcrowding would be associated with a decrease in academic performance.

THE THEMES THEY CHOOSE *

It was found that most CDD students read reasonably well; for example, the mean grade equivalent score of entering tenth grade students on Metropolitan Achievement Tests (administered in the spring of the ninth grade) was 10.357. It was found that writing was seen as a more serious problem. A standardized composition test was administered to four hundred tenth grade students, the Myklebust Picture Story Language Test.

This paper presents the authors' findings concerning these questions:

1. When students who come from backgrounds that are economically disadvantaged they are given a free choice of topic. Which topics do they choose to write about?
2. Which topics reflect their inner motivations and conflicts?
3. Can these concerns be utilized in the reading and writing curriculum for these students?

In administering the PSLT, students are presented a picture of a well-dressed young boy, seated at a table behind which are shelves holding books and a few toys. The boy is pictured with a serious facial expression. He is playing with miniature furniture and dolls representing man, woman, boy, girl, baby, and dog. The student is asked to look at the picture and to write what he wishes.

Only one student of the four hundred refused to respond. The themes selected by students were found to fall into six categories:

1. The child who is different: orphaned, retarded, handicapped, emotionally disturbed or just lonely.
2. Childhood: its impression of happiness is deceiving; seen as a time of innocence as contrasted with the world of the older person.
3. Growing up: its difficulty; conflict with parents and other adults; ambition to study, to achieve a career.
4. Sex roles: (boy is playing with toys seen more suitable for girls.)

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*Florence B. Freedman and Ruth R. Adams.

5. Society or government: child controlling dolls as government controls citizens; criticisms of society or government; hatred of war; one composition concerning the necessity of the Vietnam war.
6. Race: prejudice and overcoming it.

The authors quote from student compositions on these themes and draw two conclusions: these disadvantaged students have a great deal to express concerning their experiences, observations and thoughts; and, such students can be encouraged to express their feelings and thoughts at levels well above previous expectation.

EVALUATING THE COLLEGE DISCOVERY AND DEVELOPMENT TUTORIAL PROGRAM*

Tutoring has been an integral aspect of the College Discovery and Development Program. Through the introduction of college students as tutors at the five centers, it was anticipated that the high school students in the CDD Program would raise their level of performance. The tutor was to help the student to develop study skills, assist in remedial instruction, and also to serve as a role model (tutor-mentor). The proposal submitted to the Office of Economic Opportunity in February 1966 contained this information:

> .... disadvantaged youth tend to be lacking in long-range educational aspirations because (1) they are rarely in close association with youth who are attending or who plan to attend college, (2) their socio-economic limitations have caused them to conceive of education as a step toward more immediate vocational goals, (3) the limitations imposed by a disadvantaged environment have resulted in a relatively low level of self-esteem and self-confidence in the formal academic setting of the high school, (4) their lack of consistent success experience in the formal academic milieu has produced a self-fulfilling prophecy of low achievement and failure, (5) they are not sufficiently in close contact with those who are experiencing upward mobility in the socio-economic order, (6) they tend to have an inadequate understanding of middle-class persons and the avenues for upward-mobility, (7) they are exposed to a school setting which tends to inculcate "feminine" values while their environment leans toward "masculine" values, and (8) high-school teachers and the academic curricula tend to be attuned to middle-class values and needs.
>
> Disadvantaged youth tend to find the academic program of the high school to be "nervous" and "impatient." Lacking speed and accuracy in basic skills, they do not perform well in school exercises that are timed. As a result, their level of performance does not reflect their real academic potential. Low achievement and failure become normal expectations to many disadvantaged youth. As mentioned previously, they do not have either the familial or extra-familial support which derives from contact with upward-mobile youth having high educational aspirations and expectations.
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> Adolescence is a period when great changes can be effected in attitudes and values. It is a period when educational decisions have long-range consequences, for better or for worse. Adolescence is a crucial time for the setting of

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*Pearl Brod, abstract of a paper presented at a Symposium held by the Educational Research Association of New York State, Albany, New York, November 14, 1967.

> one's sights on social and occupational goals, for the development of attitudes toward education and the educational institution, and for the shaping of personal values and behaviors toward others.

Planners of the CDD Program hypothesized that students' achievement would be improved by this tutoring and that this increased success would lead to acceptance by students that higher education was within their reach.

The theory is sound but the problem that arises is in the implementation of the program. During discussion at meetings with CDD personnel it was apparent that the tutoring program was not functioning at the level that was anticipated.

In order to improve the program of tutoring it was necessary to evaluate the program as it exists at the present time. Since a tutorial program involves the interaction of individuals within an organizational framework, it is necessary to examine the reactions of the different groups individually and collectively. Therefore, the investigation of tutorials has been divided into five main categories. These are:

1. Study of other functioning tutorial programs in the country as a source of ideas for improvement of our own.
2. Reactions of the tutors in the CDD Program.
3. Reactions of the tutees in the CDD Program.
4. Reactions of the teachers in the CDD Program.
5. Reactions of the parents of children in CDD Program.

The information has been gathered by (1) a research of the literature; (2) visitation to functioning tutorial programs; (3) questionnaires to programs with tutoring services (all Upward Bound programs were contacted); (4) questionnaires to CDD tutors, tutees, and teachers; (5) and structured interviews with parents or guardians of students in the program.

The data is at present being analyzed. The responses received were as follows:

tutoring programs in the country	215 responses
tutors in CDD	151 responses
tutees in CDD	580 responses
teachers in CDD	116 responses
parents of CDD children	74 responses

This information to be reported will be based on both the qualitative and quantitative responses.

The potential value of this study is in providing information about the strengths and weaknesses of the CDD tutoring program with suggestions for its improvement in such areas as: (1) selection of tutors; (2) screening of tutors; (3) climate best suited for tutoring the CDD tutees; (4) effect of tutoring the same or opposite sex; (5) ratio of tutees to tutor; (6) nature and extent of tutor-mentor role. In addition, there may be indications of changes which have occurred among students with regard to: (1) motivation; (2) nature and level of aspirations; (3) achievement; (4) self-concept; (5) attitudes toward education and school personnel; (6) role model relationships; and (7) peer relationships.

This investigation would not have been possible without the cooperation of administrative staff, coordinators, guidance counselors, teachers, parents, students, and tutors. The services of the Volunteer Coordinating Council of New York City have been especially valuable.

THE USE OF SURVEY-FEEDBACK IN A CONFERENCE OF THE COLLEGE DISCOVERY AND DEVELOPMENT PROGRAM*

A November, 1966 weekend staff conference of the College Discovery and Development Program was attended by one hundred individuals, including CDD staff, New York City Board of Education Guidance Supervisors and Administrators, City University college curriculum consultants, and Office of Research and Evaluation personnel. To provide a better basis for administrative decision-making in the CDD Program a survey feedback technique was employed rather than a traditional conference procedure. Survey feedback is a method of stimulating problem diagnosis and change in organizations which involves determining by questionnaire the opinions of participants concerning functioning of the organization and their own roles and motivation.

These answers were summarized and presented to various discussion groups, as follows: (1) Those in the same position (e. g., teacher, college consultant, administrator), focused on opinions concerning CDD goals. (2) Individuals of the same discipline, concentrated on opinions concerning accomplishments of various CDD workers. (3) Five High School Development Centers, dealt with communication between CDD workers and anticipated effects of proposed changes in the CDD Program. (4) Additional open sessions, devoted to topics of special interest to conference participants, such as cultural enrichment, tutors, and selection of CDD students. Each meeting included a moderator, a recorder, and a data specialist from Office of Research and Evaluation.

The mechanics of the conference were evaluated by examining the CDD questionnaire, data feedback, and the ways in which the specified discussion roles had been played. The major recommendation was for simplification and reduction of the material covered; the main problem was over-participation by moderators.

The effect of the conference on the participants and on the CDD organization in general, was determined from observer notes, from a post-conference questionnaire and from subsequent field observations. Participants were approximately equally divided as to the usefulness of the conference method for guiding discussions. Their recommendations most commonly concerned improved communication between CDD staff. Follow-up has indicated that discussions were partially responsible for a number of subsequent decisions and actions.

Summary prepared by
Leon Cowen, Research Assistant
Office of Research and Evaluation

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*Thurlow Wilson, Lawrence T. Alexander, and Lawrence Brody.

CHAPTER X

SUMMARY AND DISCUSSION

The goals of the College Discovery and Development Program remained essentially unchanged in its second year of operation. These were: to identify underachieving disadvantaged youngsters with college potential; to increase their motivation for academic success; to improve their scholastic achievement; to develop their acceptance of college study as a realistic expectation for themselves; and, to ultimately lead to their college success.

There were two major changes in the student personnel of the Program during this second year; enrollment of 511 incoming tenth-grade students, and losses of students from the first class. As of September 1966 total student enrollment was 1,090.

Criteria for selection of the new class were only slightly different from those previously used. Admission was again based on evidence of socio-economic disadvantage and of a discrepancy between apparent potential and school achievement. However, those students who participated in the first summer's residential program had been selected at random from among the entire population of the first class. In selecting students of the second group for participation in this summer program certain family income criteria were applied. Selection of students by these criteria from among the second class produced a homogeneous, economically improverished group for participation in the summer program.

Staff changes occurred both in the CDD offices and the five host schools. A new director, a new field coordinator and new research assistants were appointed to the central staff of CDD for the 1966-67 school year. In the host schools, new teachers were assigned to meet the demands of a doubled population, as well as to replace those faculty members of the 1965-66 year who had been reassigned outside the CDD Program. An additional guidance counselor was assigned to the CDD Program in each of the host schools to serve the new class; the previous relationships between counselors and students of the first group were continued for the second year.

Instruments and procedures used for collecting and analyzing data in the second year were essentially unchanged from those of the previous year. In this second report comparisons have been made between the CDD and Control groups, between the performance of CDD II and CDD I in tenth grade, and between the achievement of CDD I in its first and second years.

COMPARISONS OF CDD I AND CDD II AT INTAKE

Comparison of the socio-economic characteristics of CDD I and CDD II revealed that the populations were essentially identical. The two groups were also found to be closely similar in academic achievement prior to enrollment in the CDD Program. In addition, it was found that the two groups showed no significant differences in performance on aptitude and achievement measures administered in the Fall semester of their respective sophomore (tenth grade) years. As in the previous year there was significant variation among the populations of the five CDD Centers on most of the socio-economic and aptitude variables. These variations have precluded meaningful comparisons of achievement among the five Centers.

ACHIEVEMENT FOR CDD I IN THE ELEVENTH GRADE

In general there was significant variation from Center to Center in fall and spring general averages for CDD I in the eleventh year as shown by analysis of variance. In both semesters of the eleventh year the Control group outperformed CDD I in achievement.

A general downward trend was noted when general averages for CDD I in each Center were analyzed over the four terms of their sophomore and junior years. No significant differences in averages from term to term was found for the Control groups.

In the spring semester of the eleventh grade CDD I took the biology, eleventh year math, and foreign language Regents examinations. Significant variability in performance was found among the five Centers. Control I demonstrated significantly better performance than CDD I on the biology and eleventh year math examinations. However, there was no significant difference on the foreign language Regents examinations.

ACHIEVEMENT FOR CDD II IN THE TENTH GRADE

Analysis of CDD II's fall and spring averages as well as performance on Regents examinations, revealed significant variability among Centers. Inter-Center differences were also noted in the attendance record of CDD II students.

Comparisons of CDD I and CDD II in tenth year achievement showed that CDD I had significantly better fall and spring general averages. However, CDD II had a significantly better attendance record than CDD I.

Over the four Centers with Control groups, Control II was seen to have obtained significantly higher means than CDD II on fall and spring general averages. Comparisons of the performance of CDD II with Control II on the foreign language, science, and geometry Regents examinations yielded significant differences between means in favor of the Control group. There was no significant difference, however, between CDD II and Control II in their performance on the algebra Regents.

EFFECTS OF THE SUMMER PROGRAM

Comparisons between UB I and N-UB I in spring general average and foreign language, mathematics and science Regents revealed no significant differences in performance.

Students who experienced one summer on the Columbia campus and were identified as UB II were not significantly different on aptitude measures from those CDD students who had spent two summers (UB I) with Project Double Discovery. UB I students did perform significantly better than UB II students in the spring semester of the 1966-67 school year. On all other measures of achievement no significant differences were observed.

Except for the superior achievement of UB II on the Reading subtest of the Stanford Achievement Test, there were no significant differences between UB II and N-UB II on the aptitude measures. Non-Upward Bound II students scored significantly higher than UB II students on the science regents examination but on all other measures, significant differences were not observed.

Both the UB groups and N-UB counterparts were not significantly different in the average number of days absent for the 1966-67 school year.

CURRICULUM

The requirement of CDD students to take Regents examinations, and the academic sequence and courses of study mandated by the Board of Education, necessitated an approach to curriculum innovation other than the conventional one, i.e. change in subject matter.

Through the vehicle of special conferences for all CDD personnel, consultations between high school and college teachers, small classes for CDD students and double periods in certain subjects, tutoring and increased guidance services, an attempt was made to modify the approaches, materials, methods and patterns of organization of teaching and learning processes, in addition to creating a positive climate for learning.

COLLEGE CONSULTANTS

College professors were made available to the Program by the four senior colleges of the City University to serve as consultants in the major academic disciplines. Among the services rendered by the college consultants were visits to the Centers, conferences with teachers and department chairmen, participation in workshops, giving of demonstration lessons and working with tutors. In addition to these, each consultant undertook a variety of activities special to his area and according to his particular orientation and interests. The success of the consultants is a reaffirmation of the idea that college professors and high school teachers can work cooperatively and constructively towards the articulation of objectives and goals and understanding of each other's problems.

GUIDANCE SERVICES

The College Discovery and Development Program students were given more intensive and extensive guidance services than usually obtained in the public school setting. A smaller counselor load made possible more frequent counseling interviews with individual students and the development of closer relationships. Small group sessions with students provided the opportunity to discuss matters related to school problems, college admission and vocational opportunities. Conferences with parents, students, and teachers afforded all those concerned with the Program, valuable insights into the problems commonly encountered by the students in the Program. The effects of improved guidance services were reflected in better student morale and more active participation in both academic and extra-curricular activities as well as in better attendance.

DISCUSSION

Certain general trends which are detectable in first year results of the College Discovery and Development Program should be examined in the second year data. For the first year, the CDD I population as a whole on intake was found to be inferior on academic aptitude and previous achievement measures to the Control population. On intake, CDD II was found not significantly different from Control II on similar measures when viewed as a total group. However, there were within these total populations a number of differences in opposite directions between groups in the individual host schools; these Center-based differences tended to neutralize each other when data were combined to produce total group summaries.

Second, in comparisons of academic averages over the two years of CDD I enrollment against Controls, the figures show a general downward trend for CDD I but a generally stable level for Control I. On face inspection this would seem to be a continuation of a trend visible in the first year.

In considering the results summarized above it should be noted that the term "Control" has been used throughout this report only in the sense defined by Professor Tanner and Mr. Lachica in the first annual report.[1] The groups herein designated as Control I and Control II were comparison groups, representative of the total populations enrolled in the academic programs of the five host high schools, but excluding students of lesser academic achievement records who were enrolled in other programs, such as the general and commercial tracks. These comparison groups were selected by random sampling of these five academic program populations; they were not, as the term "Control" may seem to imply, matched with CDD I and CDD II by socio-economic, previous achievement, or scholastic aptitude criteria.

Two possible sources may, therefore, be postulated. First, there may be a tightening of standards of grading for CDD students as they progress to higher grade levels. Possible corroboration is found in the reduction of numbers of special classes for CDD I students and increase of numbers of CDD I students in regular academic classes of the host high school. In these regular classes CDD students are graded by teachers in relation to their non-CDD classmates. Second, the Control group becomes increasingly better selected with time since its unsuccessful students are reprogrammed into the "general" track. Policies regarding retention of CDD students as agreed by the Board of Education and the City University at the Lake Minnewaska Conference of CDD in November 1966 called for the retention in the CDD population of students, although no longer eligible for the academic program. Thus, except for dropouts, the CDD group figures include the achievement of its least competent surviving members, while the "Control" figures exclude a similar reduction of group mean for academic average.

Third, for the measures which have been studied to date, specifically achievement and absences, there seem to be no differences between students who have had one, two or no years of summer Upward Bound experience.

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[1] Tanner, Daniel and Lachica, Genaro, Discovering and Developing the College Potential of Disadvantaged High School Youth: A Report of the First Year of a Longitudinal Study on the College Discovery and Development Program. Office of Research and Evaluation, City University of New York, January, 1967, p.20.